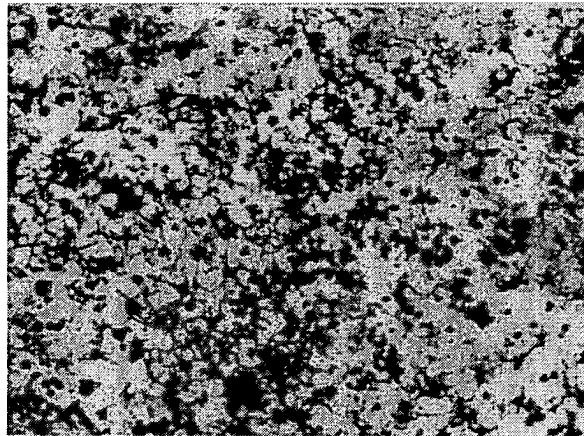
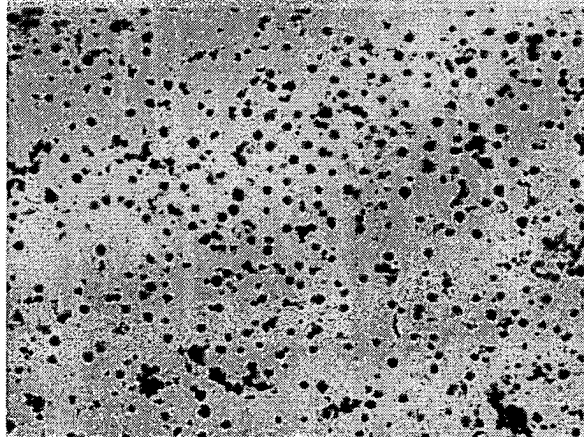




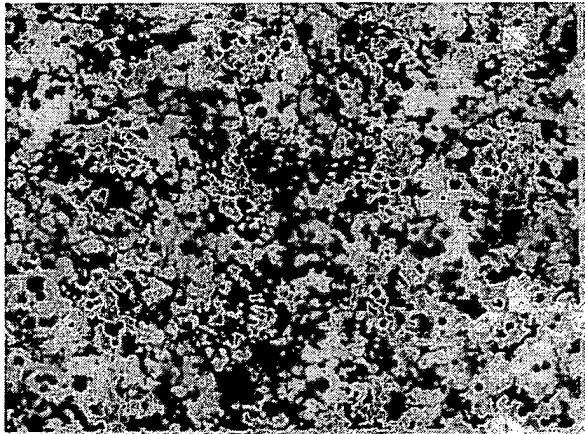
**FIG. 1A**



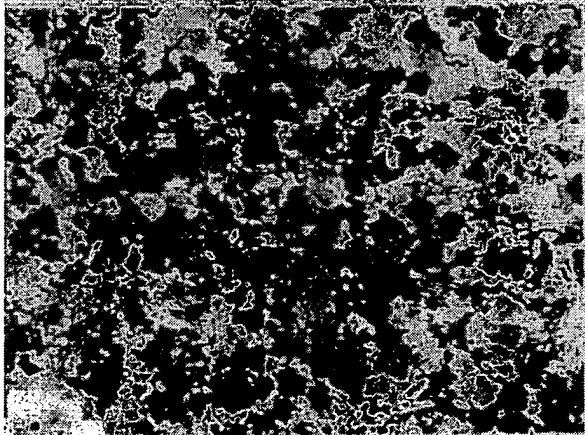
**FIG. 1B**

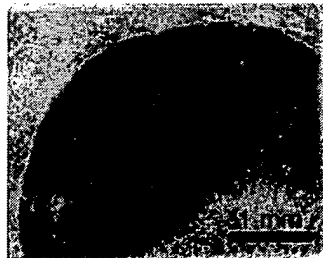


**FIG. 2A**

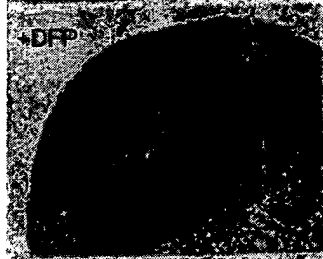


**FIG. 2B**

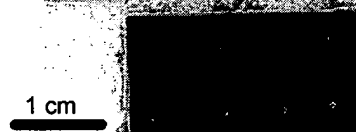




**FIG. 3A**

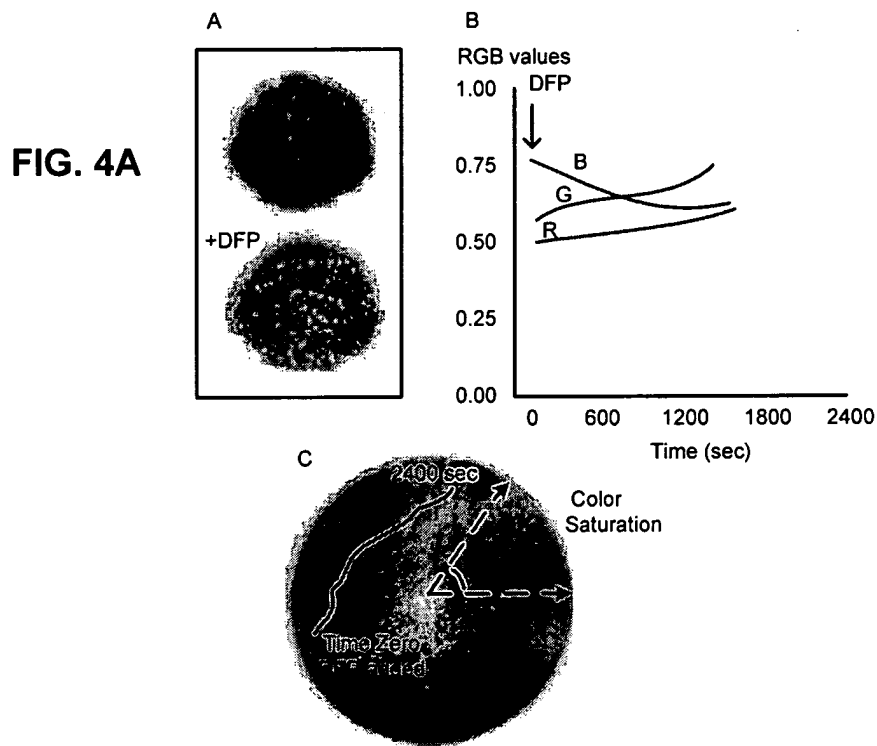


**FIG. 3B**

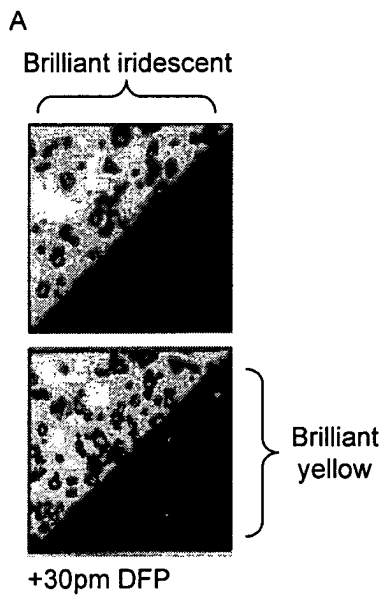


**FIG. 3C**

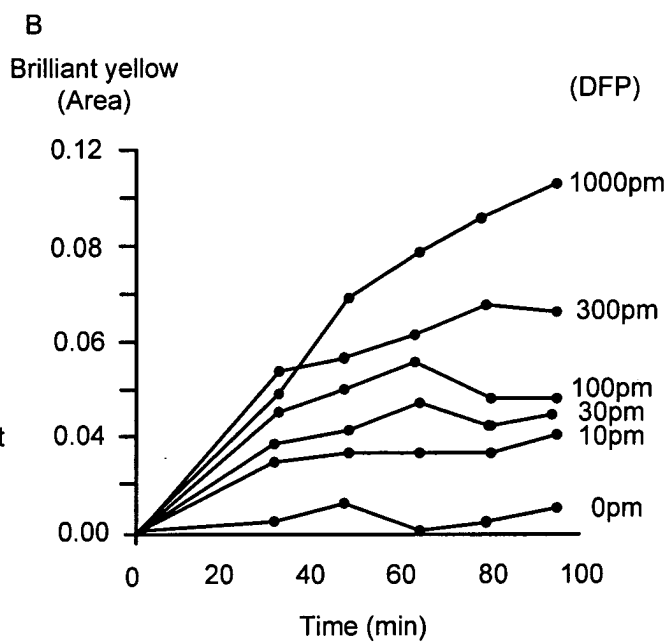
+DFP



**FIG. 4C**

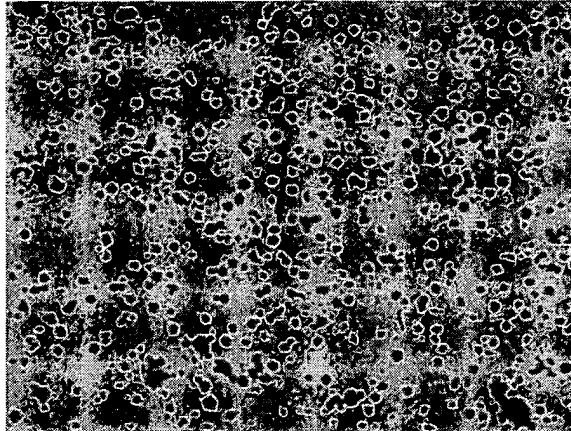


**FIG. 5A**

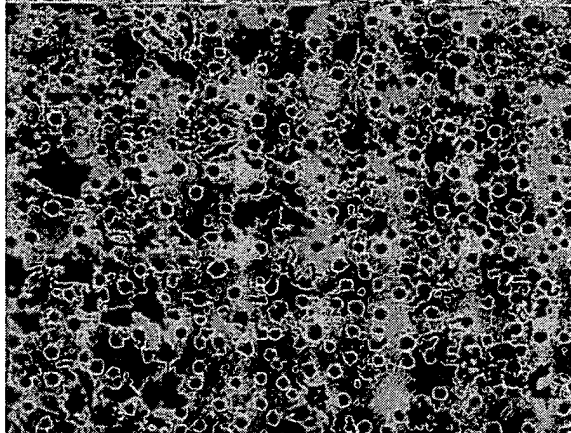


**FIG. 5B**

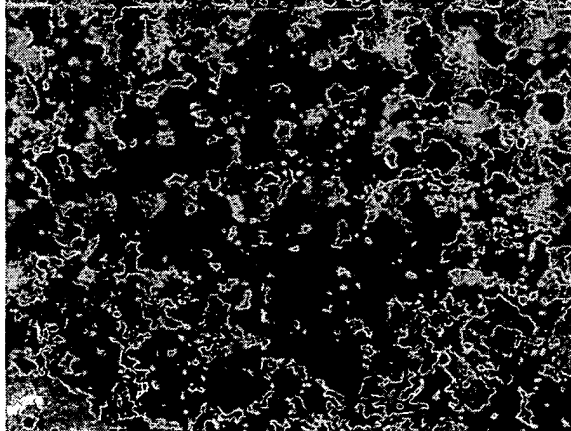
**FIG. 6A**



**FIG. 6B**

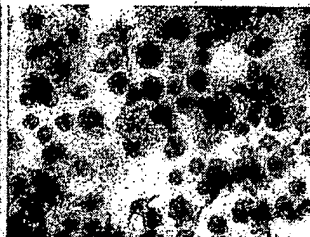
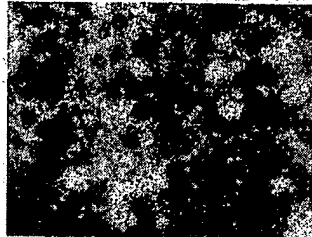


**FIG. 6C**



Strain 1

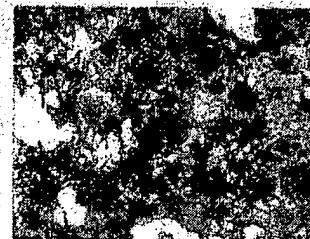
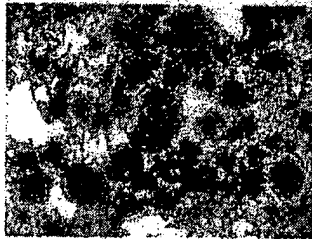
**FIG. 7A**



**FIG. 7B**

Strain 2

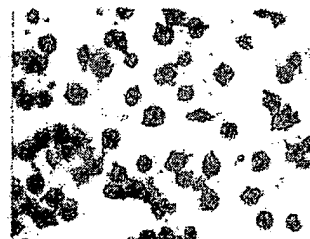
**FIG. 8A**



**FIG. 8B**

Strain 3

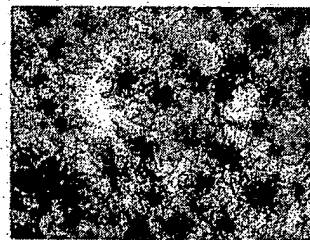
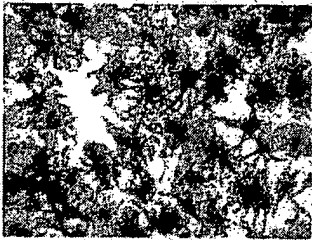
**FIG. 9A**



**FIG. 9B**

Strain 4

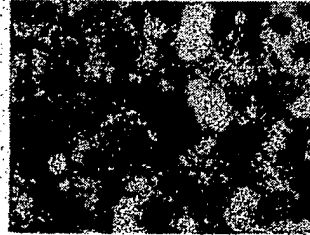
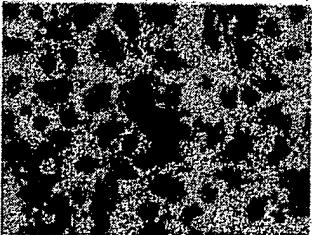
**FIG. 10A**



**FIG. 10B**

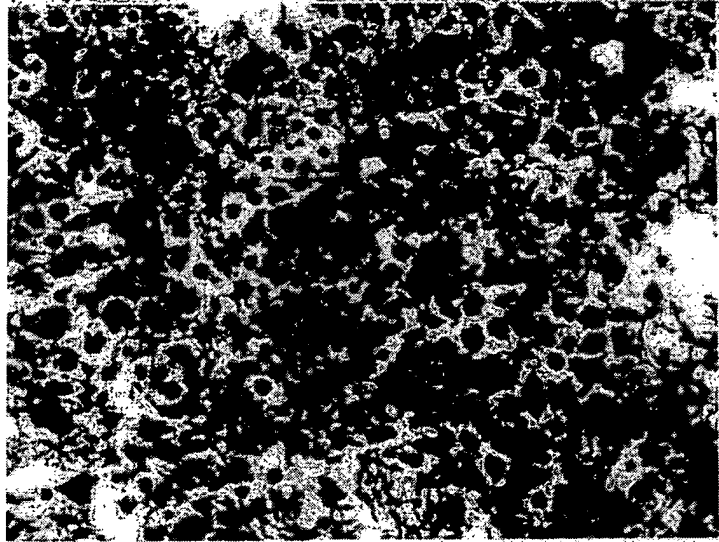
Strain 5

**FIG. 11A**

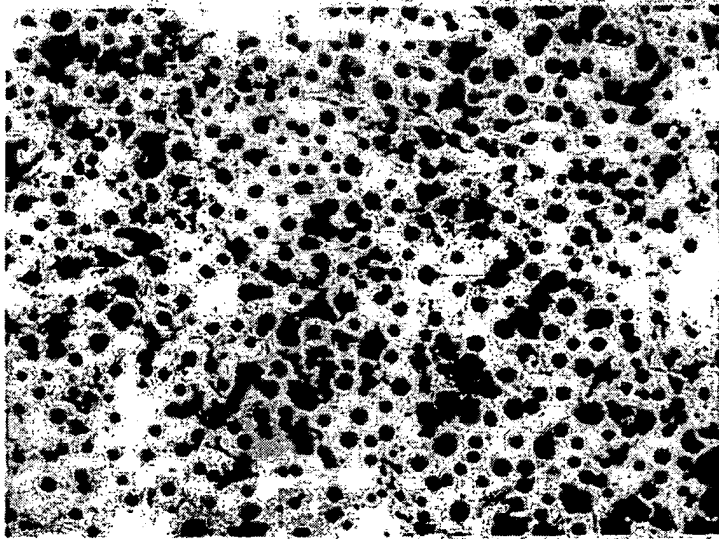


**FIG. 11B**

**FIG. 12A**





















**FIG. 12B**





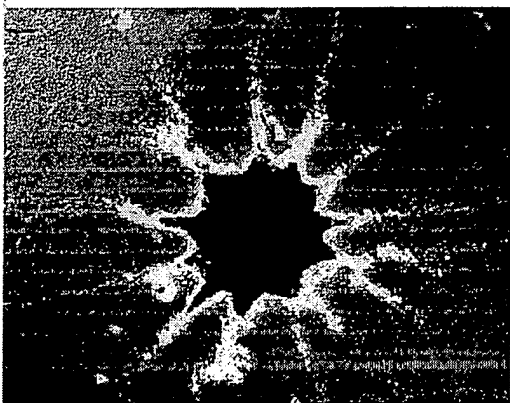
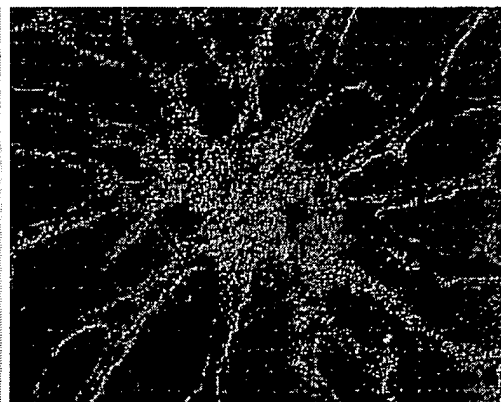
**FIG. 13**

|         | Agent  | Chemical Type  | Effective Dose | Direct Effects   | Challenge A (norepinephrine)  | Challenge B (forskolin)   |
|---------|--|--|----------------|--|---|---|
| Control | None   | -  | -              |    |    |    |
| I       | DFP<br>Mipafox<br>Paroxon  | phosphorofluoridate<br>phosphorfluorodiamidate<br>phosphate  | ppm            |    |    |    |
| II      | PMSE<br>EPN  | sulfonylfluoride<br>phosphonothinate   | ppm            |    |    |    |
| III     | Mevinphos<br>Dichlorvos  | phosphate<br>phosphate   | ppt            |  |  |  |
| IV      | Trichlorfon  | phosphate  | ppt            |  |  |  |
| V       | Chlorpyrifos<br>Fenitrothion<br>Merphos<br>Carbaryl<br>Methomyl<br>2,5 Hexanedioac<br>Acrylamide | phosphorothinate<br>phosphorothinate<br>phosphorotrithinate<br>carbanilate<br>carbanilate<br>diketone<br>amide | ND             |  |  |  |

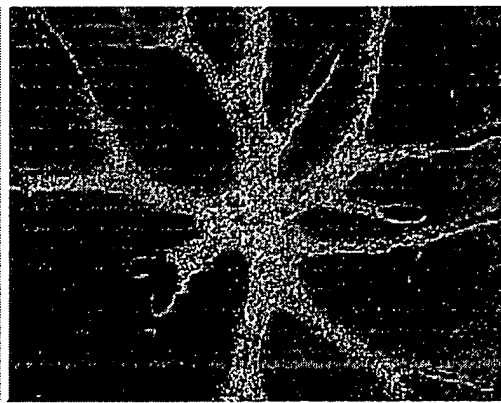
**FIG. 14A**



**FIG. 14B**

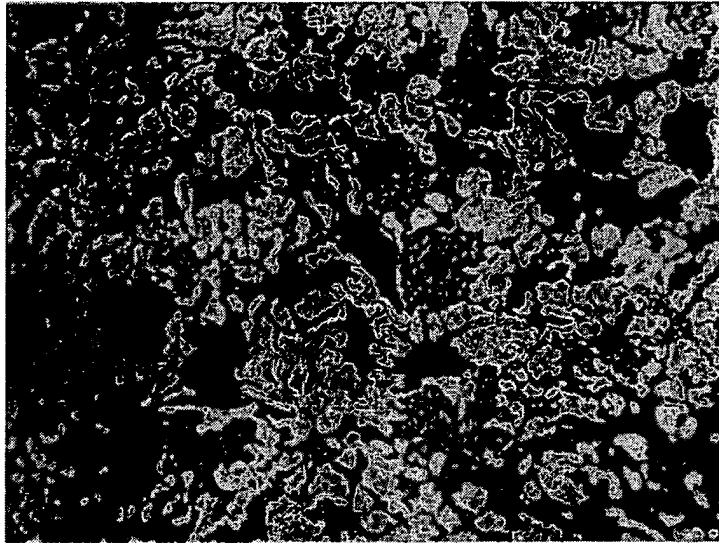


**FIG. 14C**

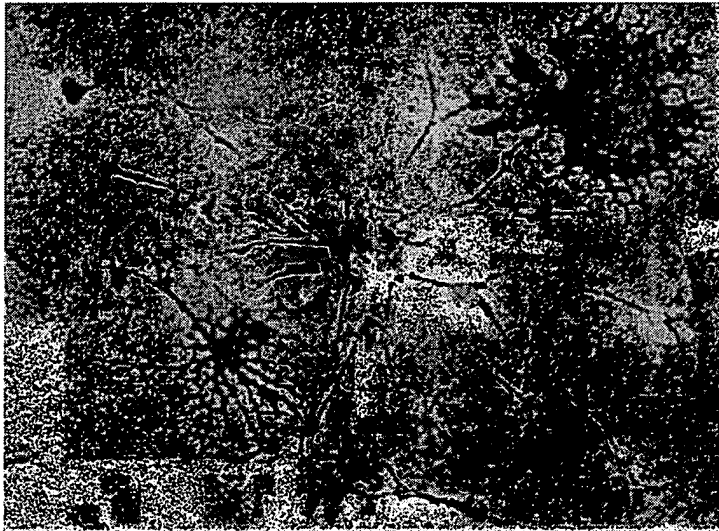


**FIG. 14D**

**FIG. 15A**



**FIG. 15B**

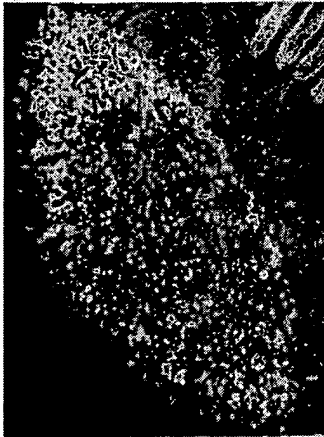


100 Microns

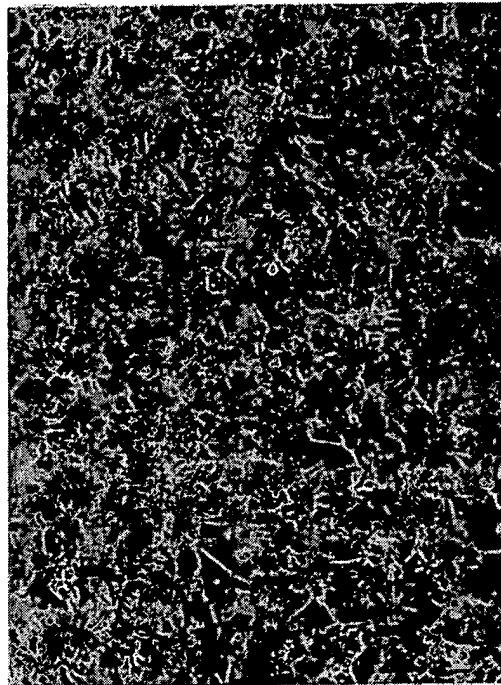
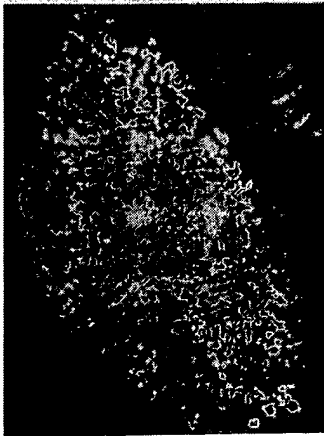
**FIG. 16C**



**FIG. 16B**



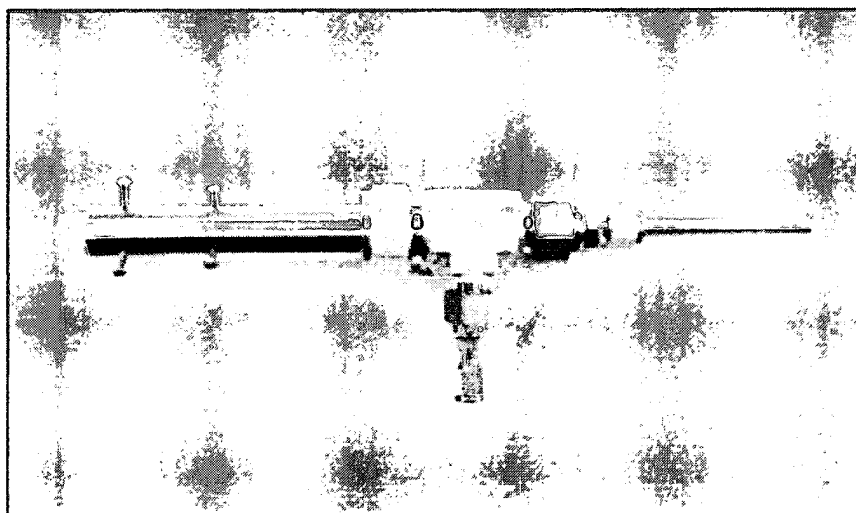
**FIG. 16A**



**FIG. 17**

Hardware construction for the encapsulation of SOS sensor cells.

FIG. 18A



Extruder  
hardware  
(assembled)

FIG. 18B

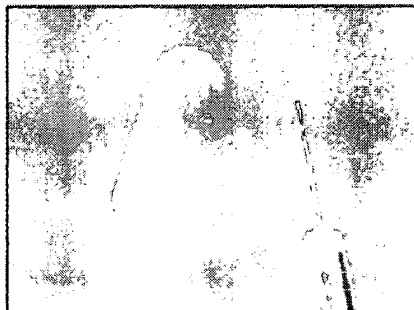
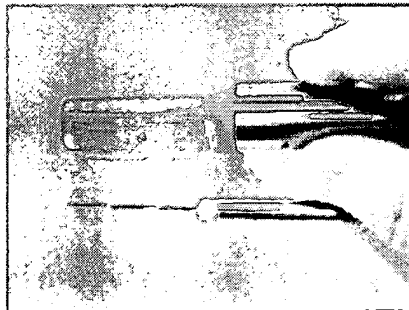
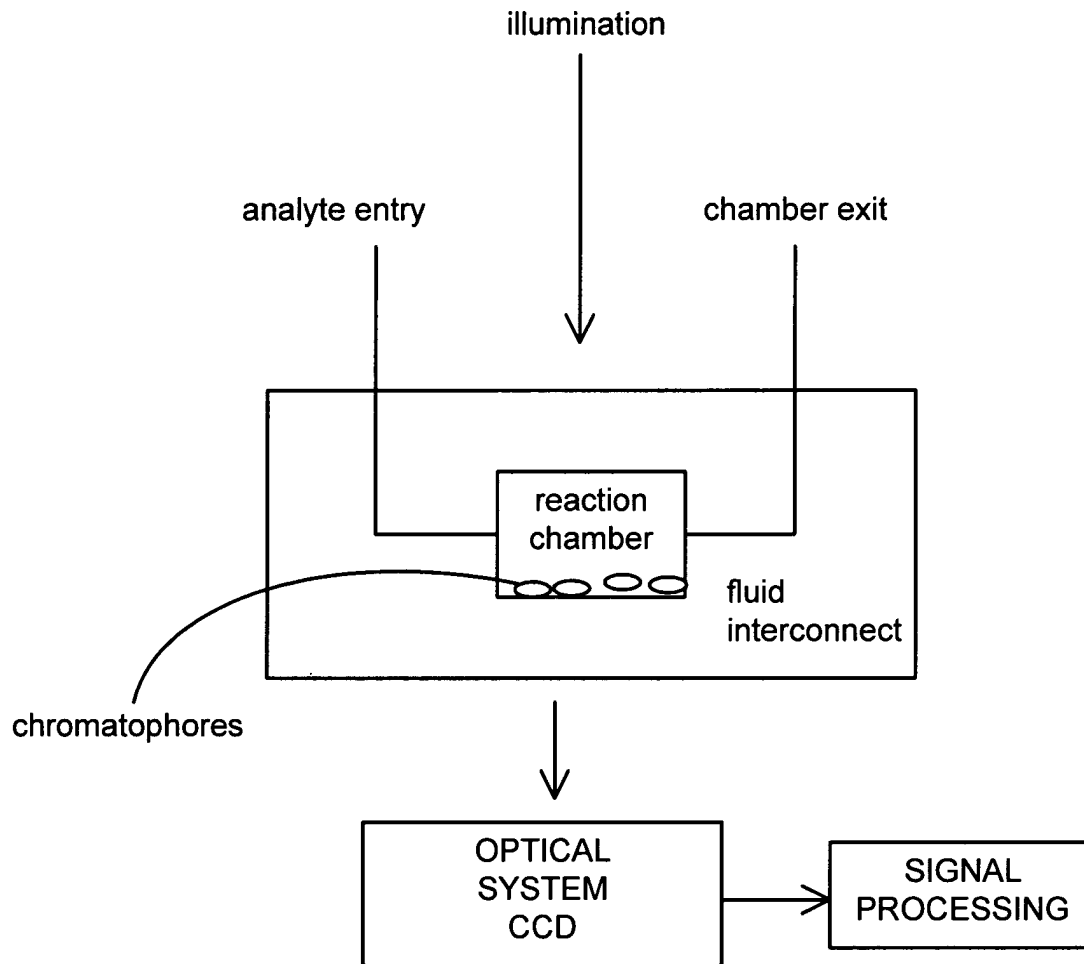


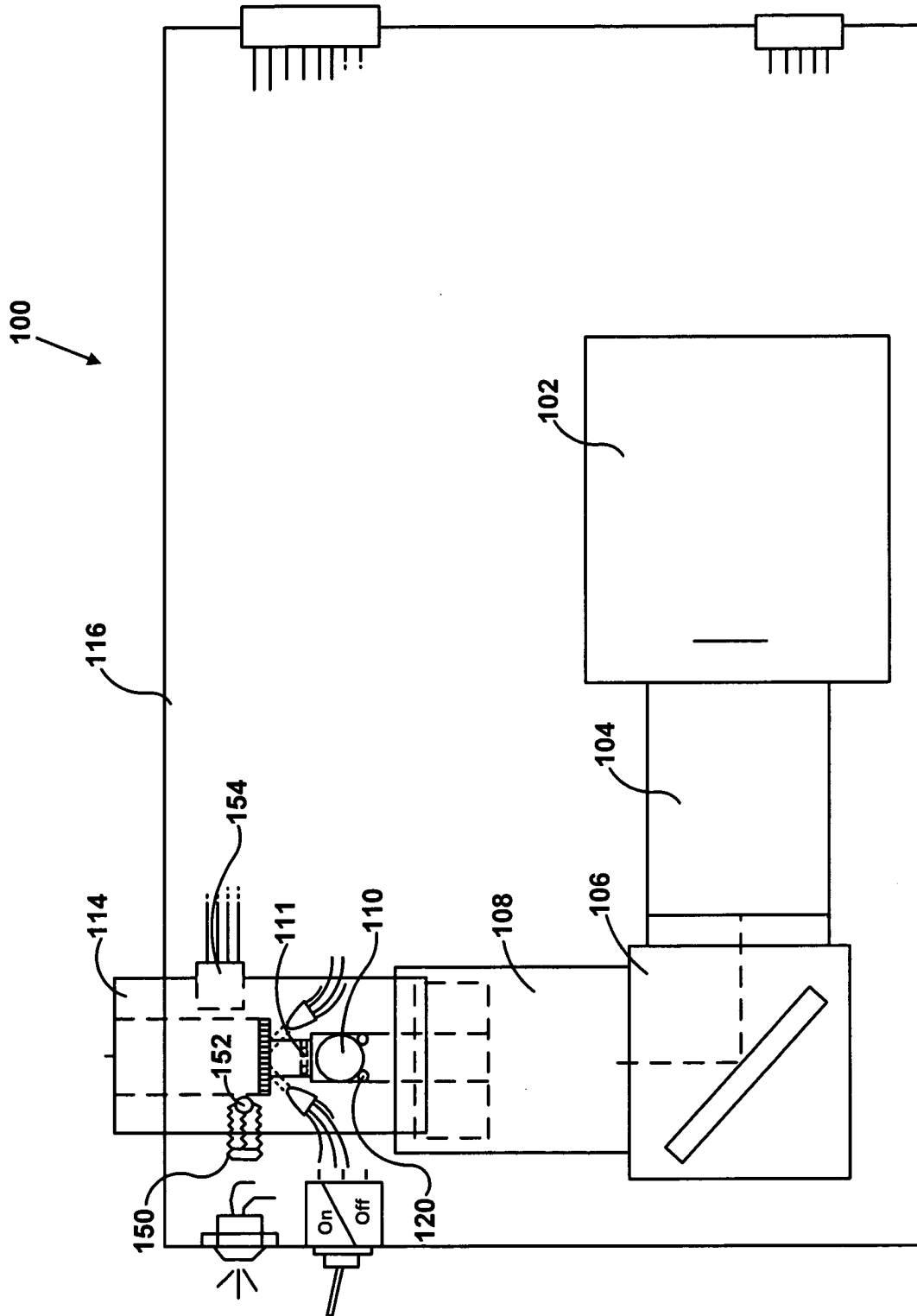
FIG. 18C



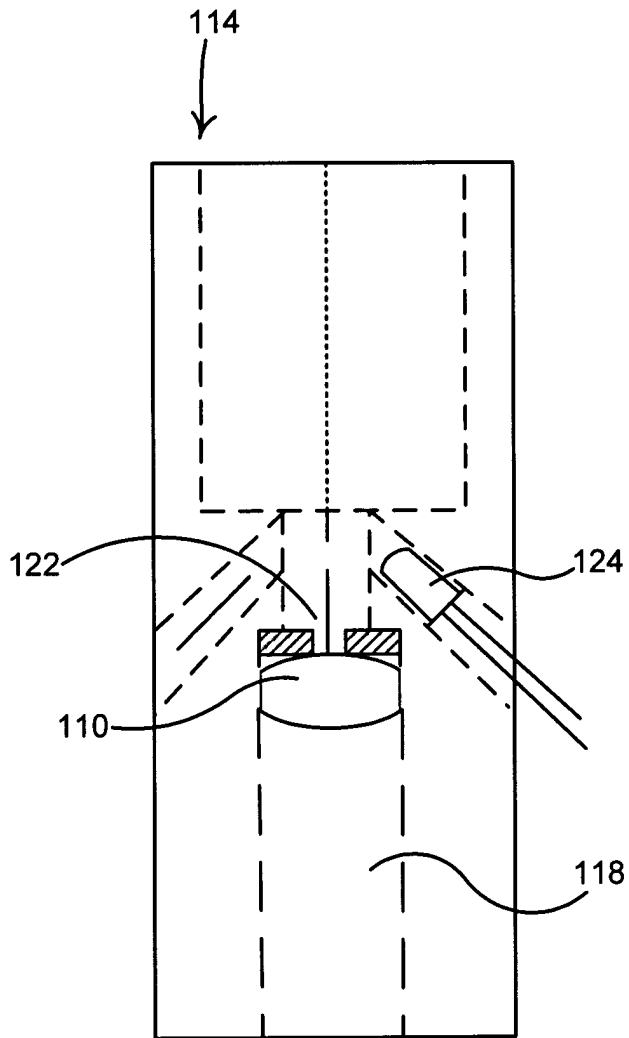
Air-flow  
adjustment  
mechanism



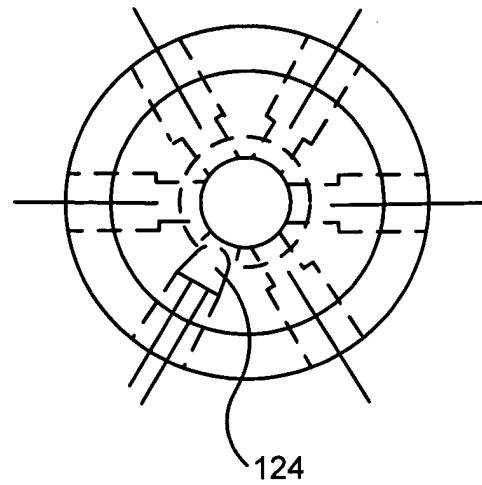
**FIG. 19**



**FIG. 20**

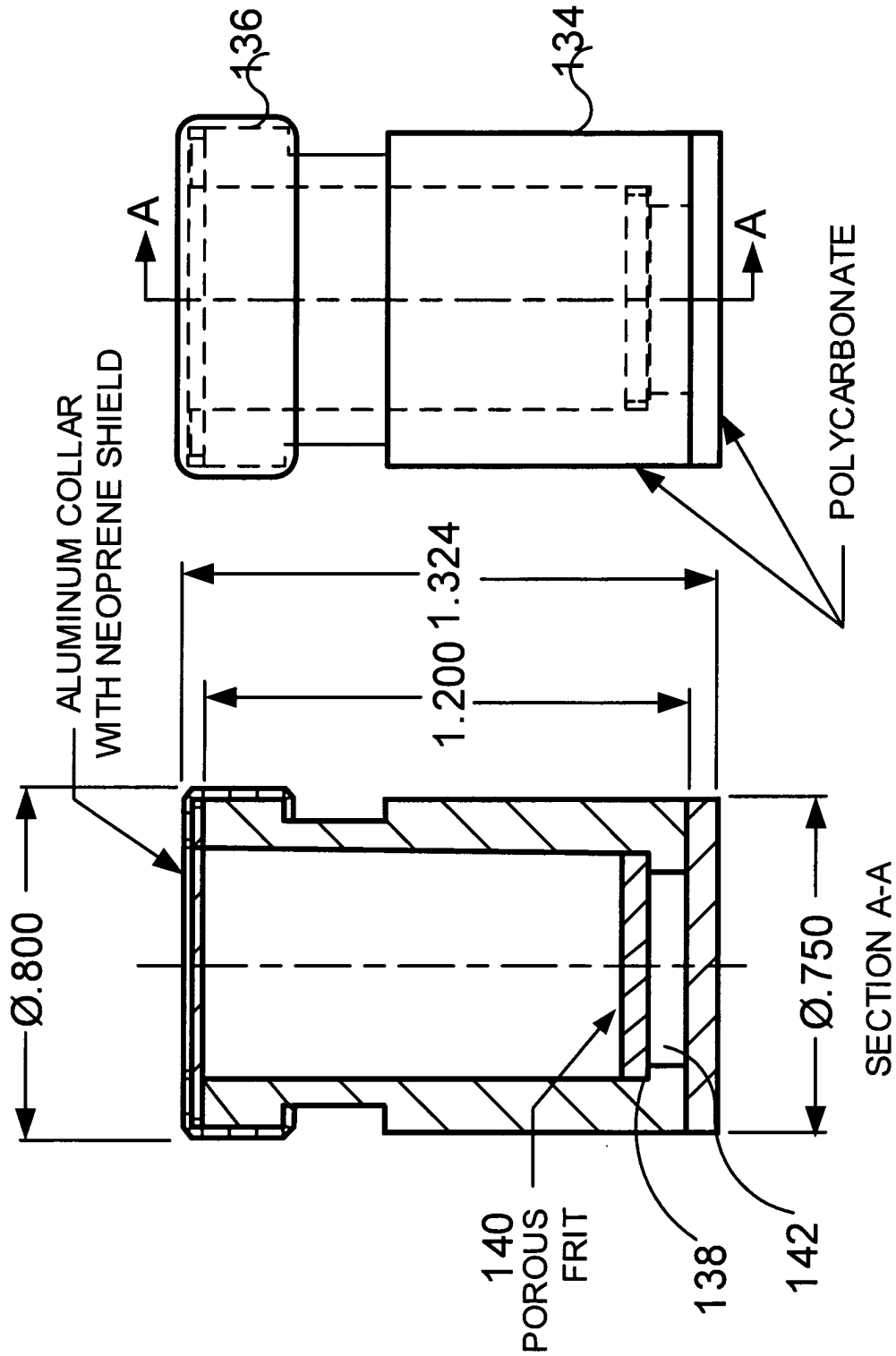


**FIG. 21**



**FIG. 22**





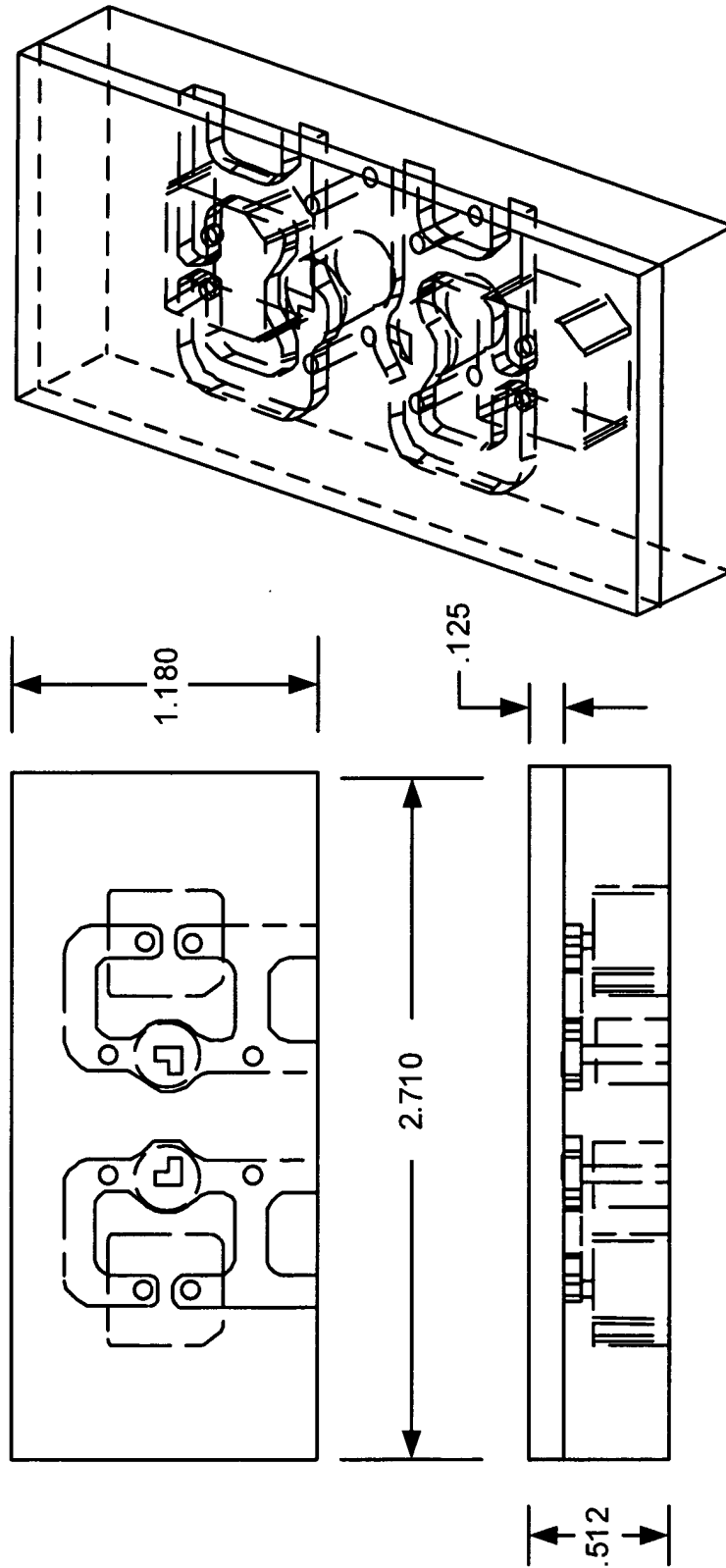
# APOLLO CHAMBER ASSEMBLY

FIG. 23

FIG. 24

# CHAMBER AND TOP LAYER ASSEMBLY

(OVERSIZED MARK ON TOP LAYER FOR VIEWING)

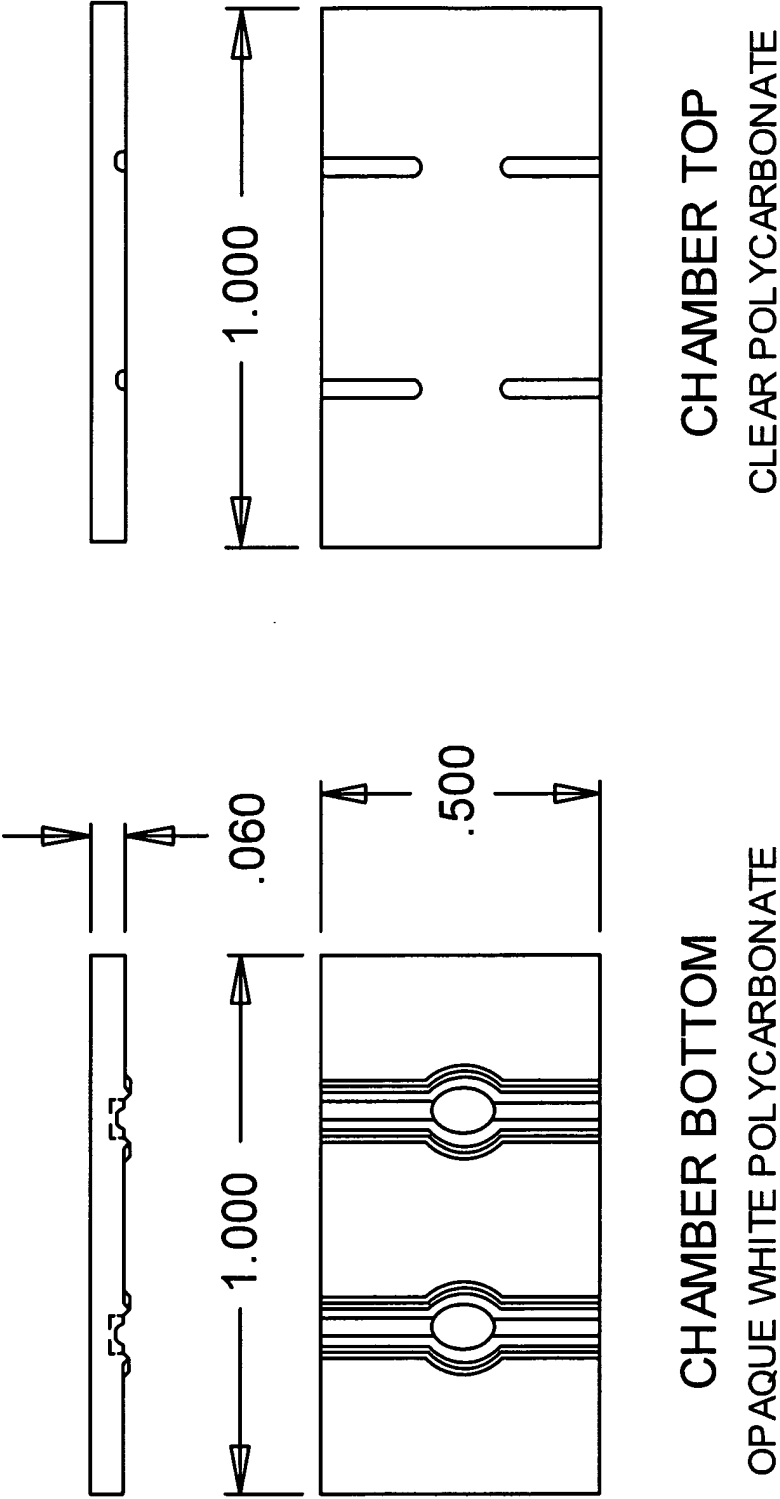


SCALE 1.750

SCALE 2.000

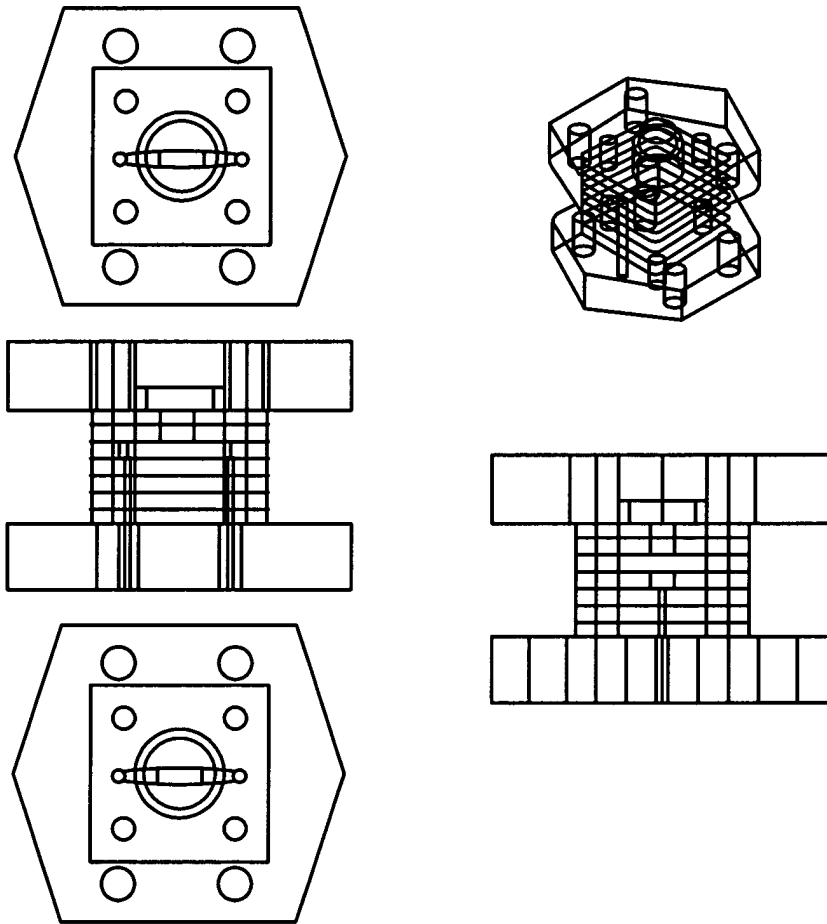
CLEAR POLYCARBONATE

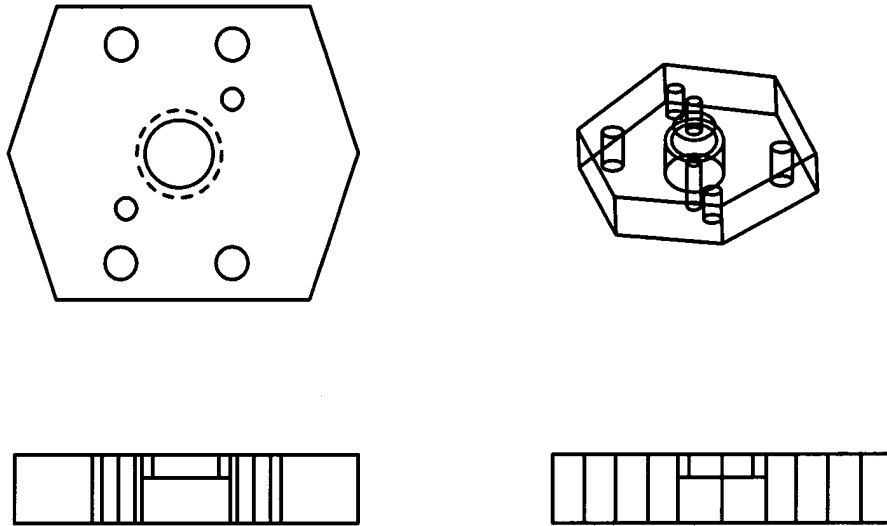
**FIG. 25A**



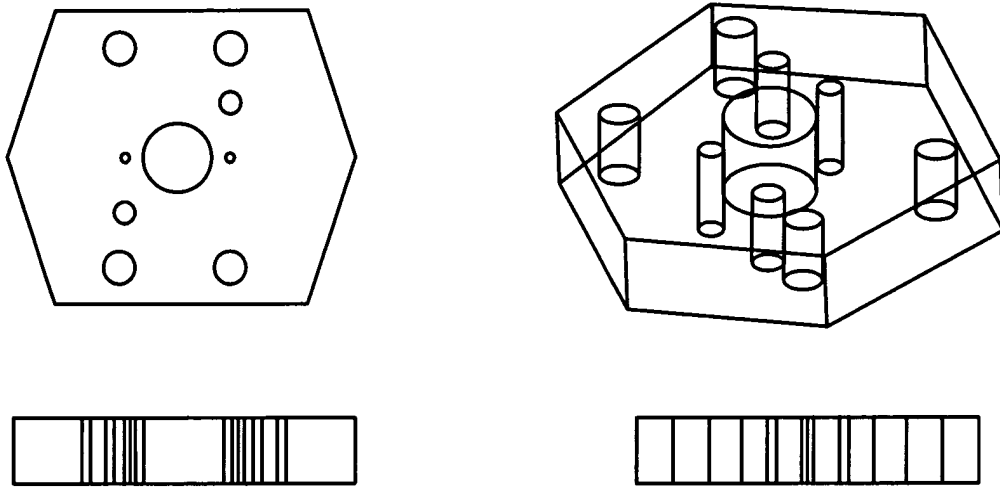
# GEMINI 3 CHAMBER COMPONENTS

FIG. 25B





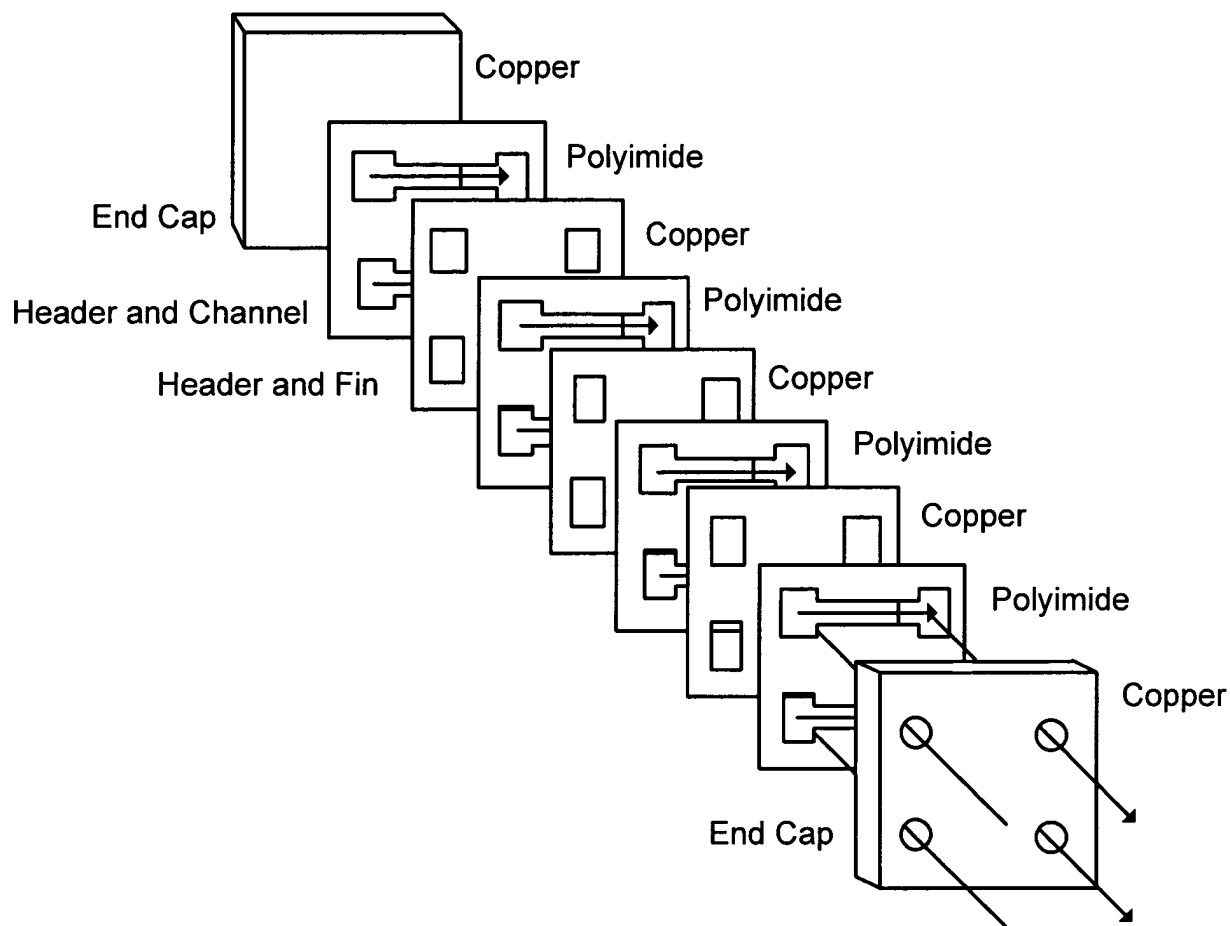
**FIG. 27**



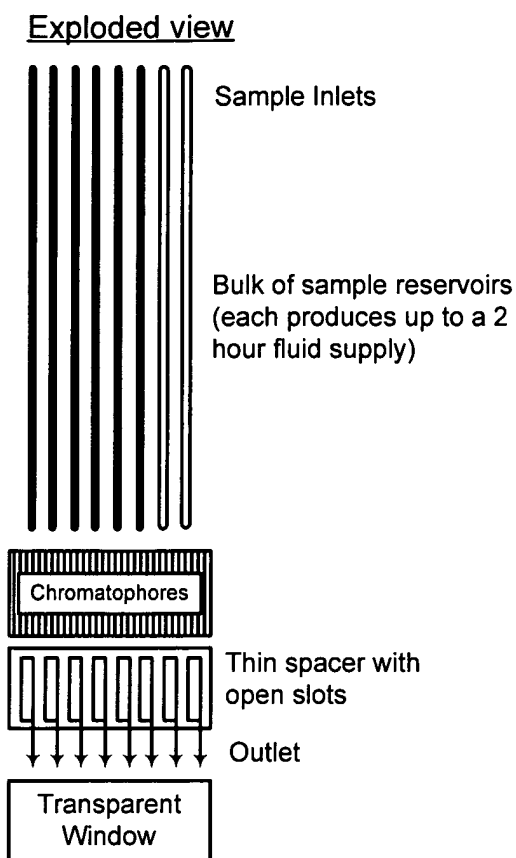
**FIG. 28A**



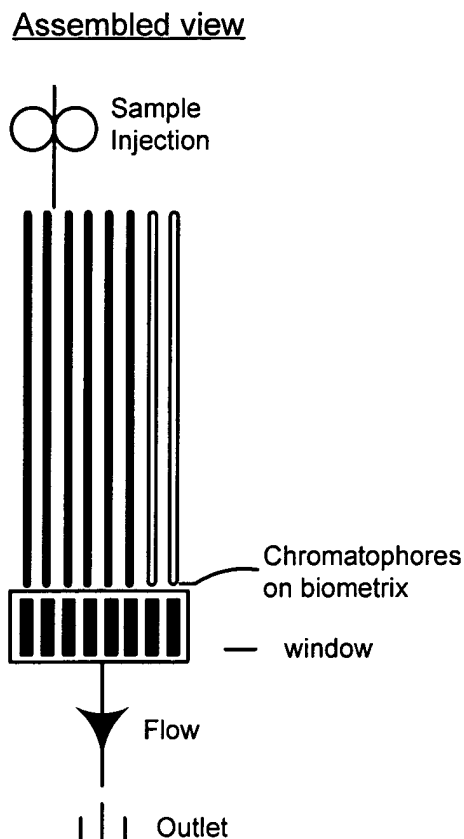
**FIG. 28B**



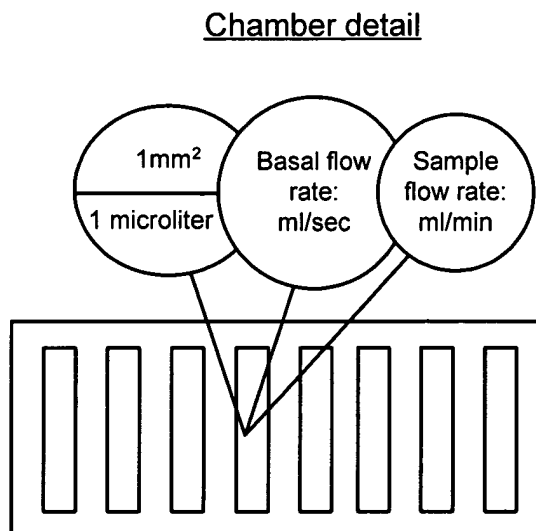
**FIG. 29**



**FIG. 30A**

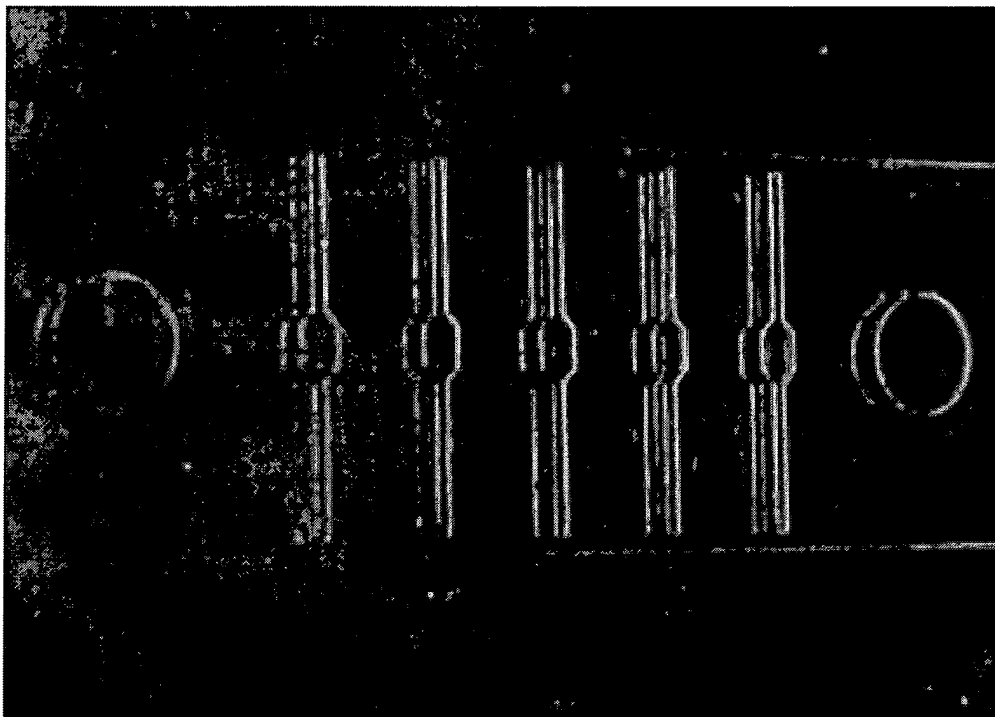


**FIG. 30B**

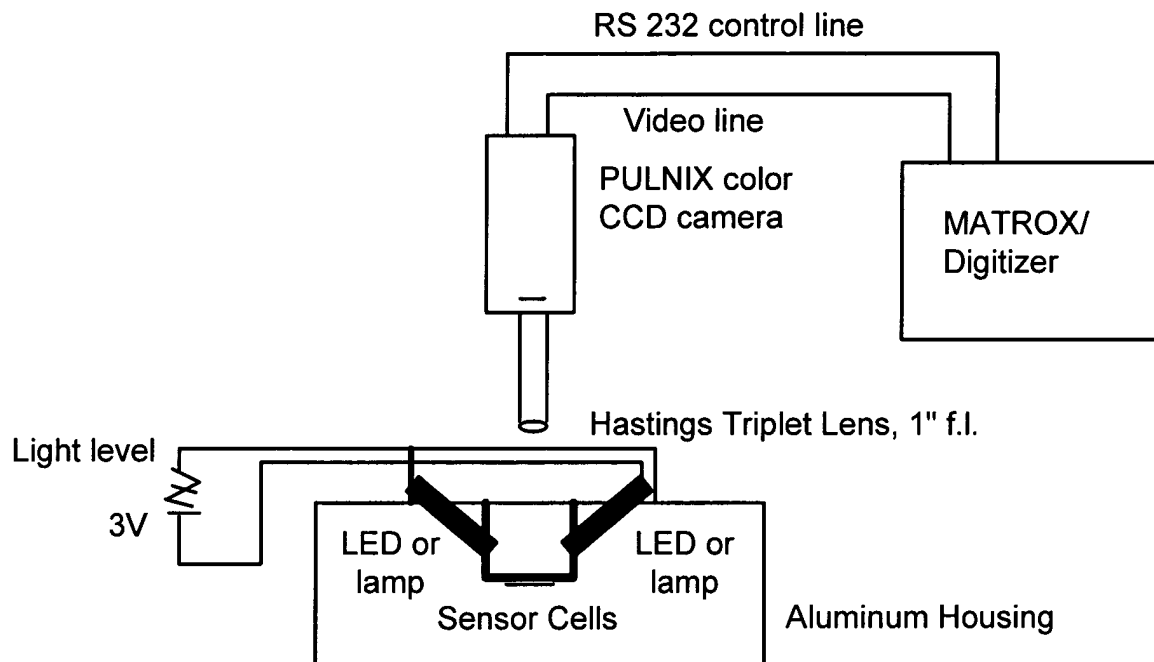


**FIG. 30C**



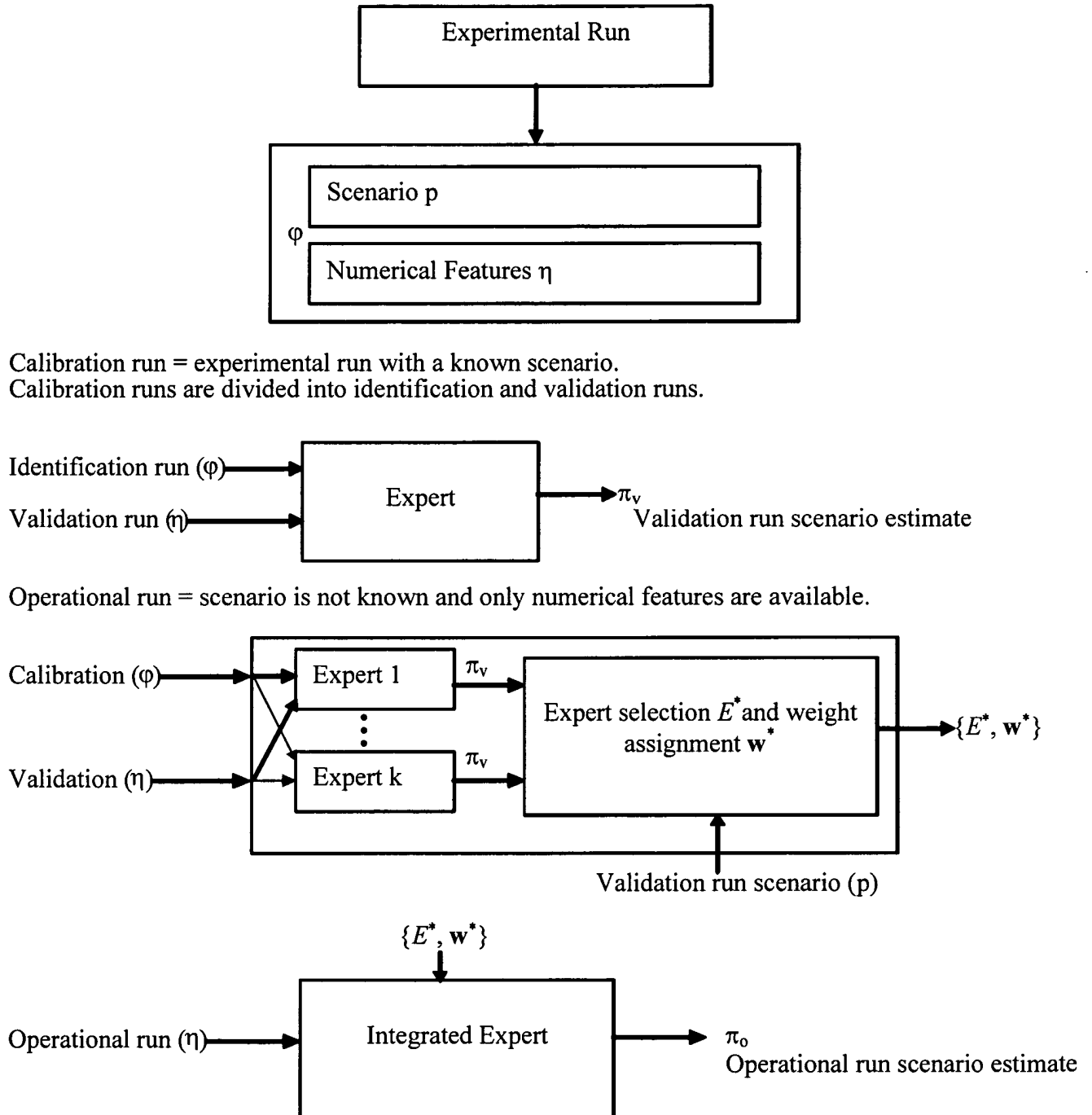


**FIG. 31**



**FIG. 32**

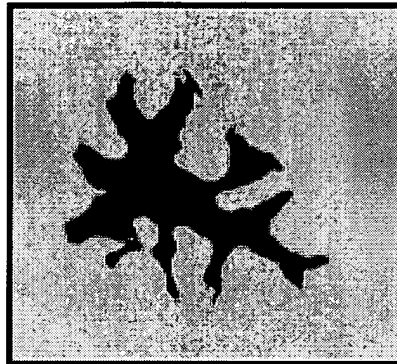
**Patent: Soft Classification Flowchart Version 1.0**



**FIG. 33**

**FIG. 34A**

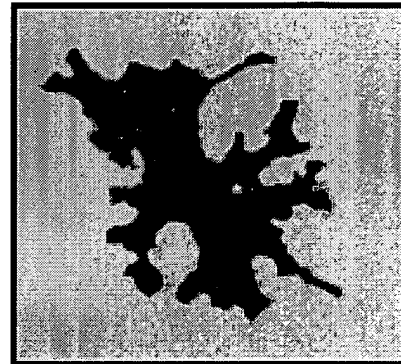
(+)  $\text{Ca}^{2+}$



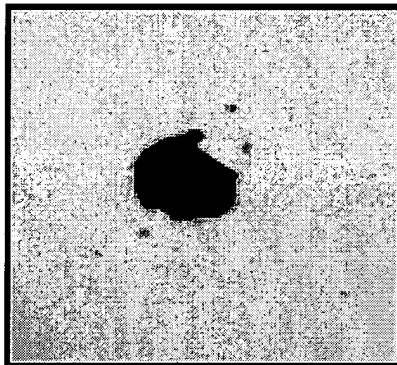
Before

**FIG. 35A**

(-)  $\text{Ca}^{2+}$



After 10nM  
Norepinephrine



**FIG. 34B**



**FIG. 35B**

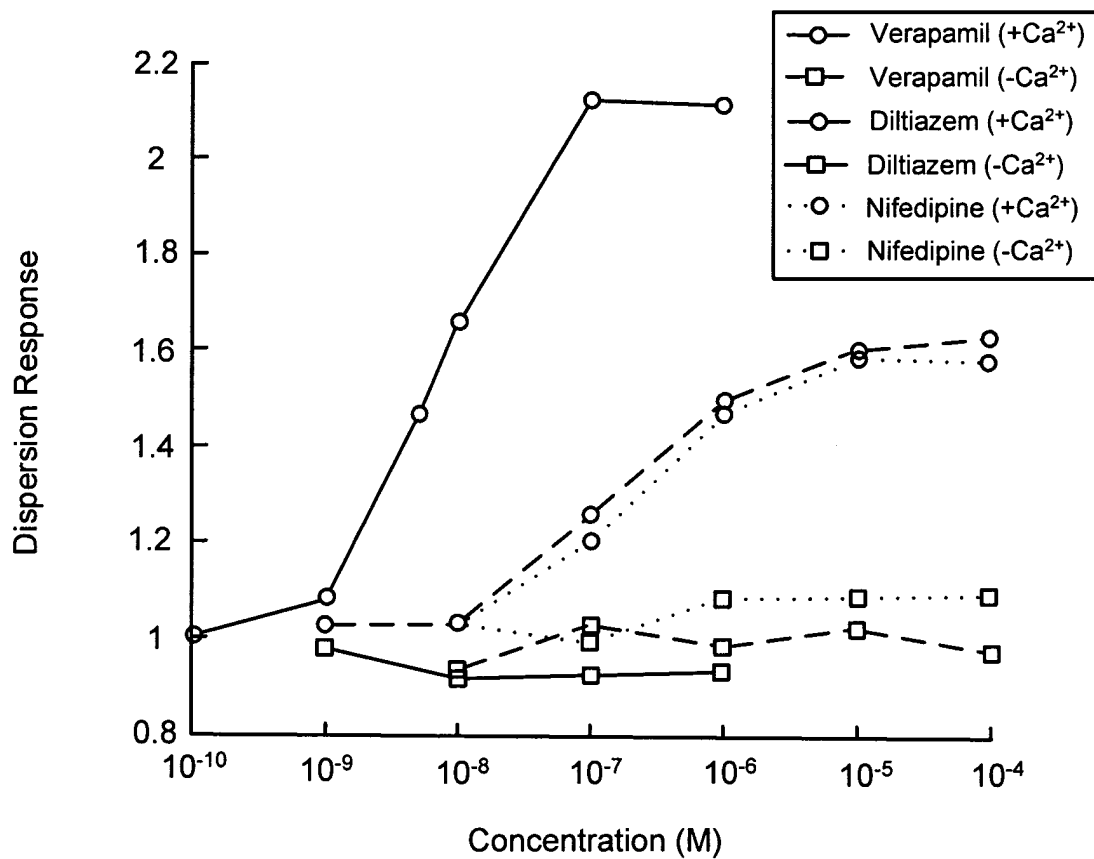
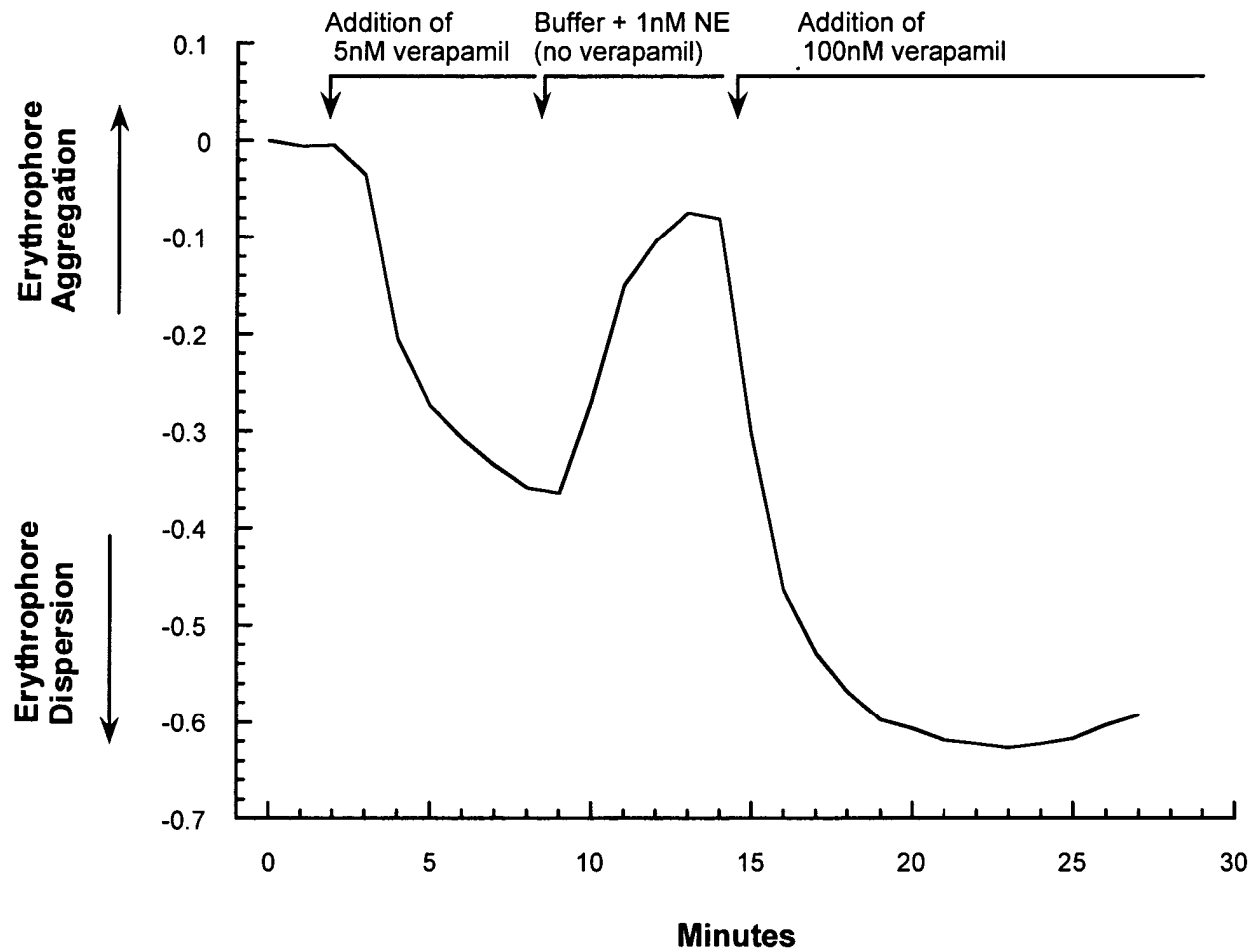
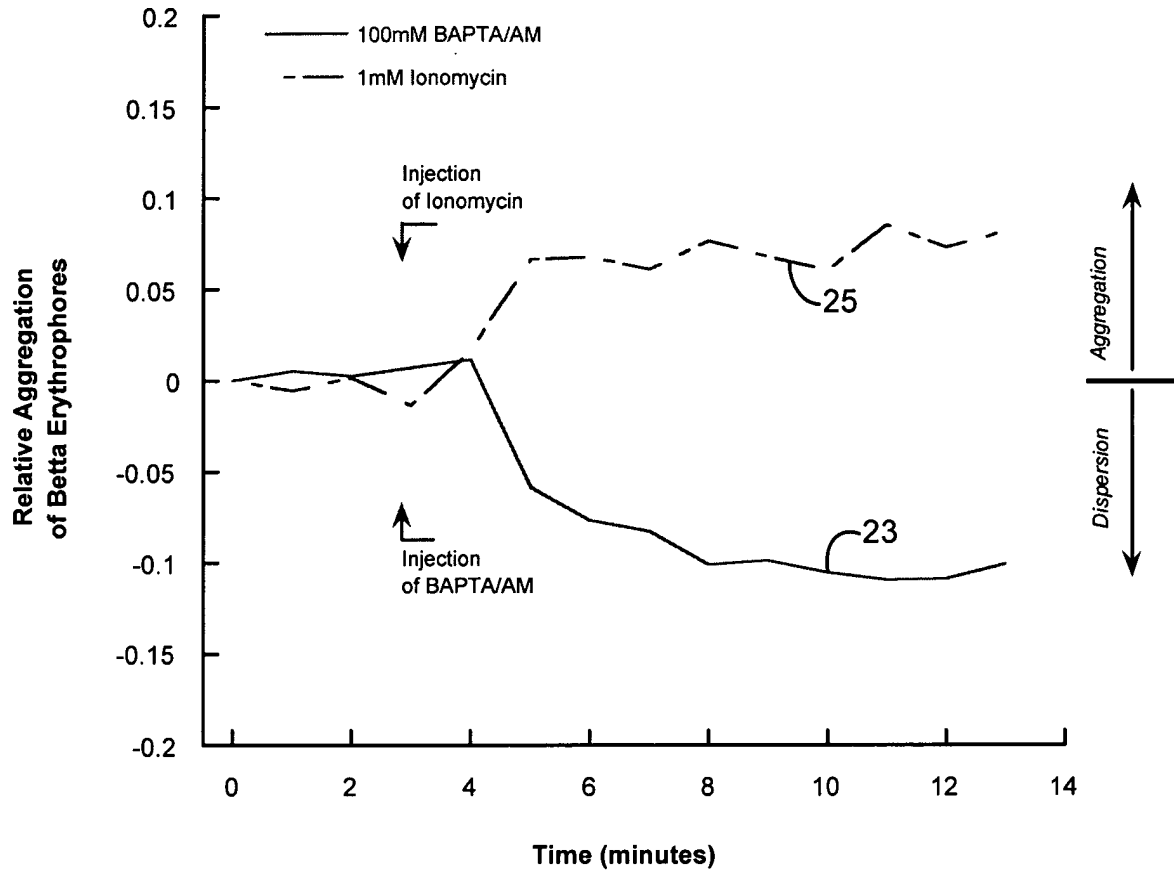


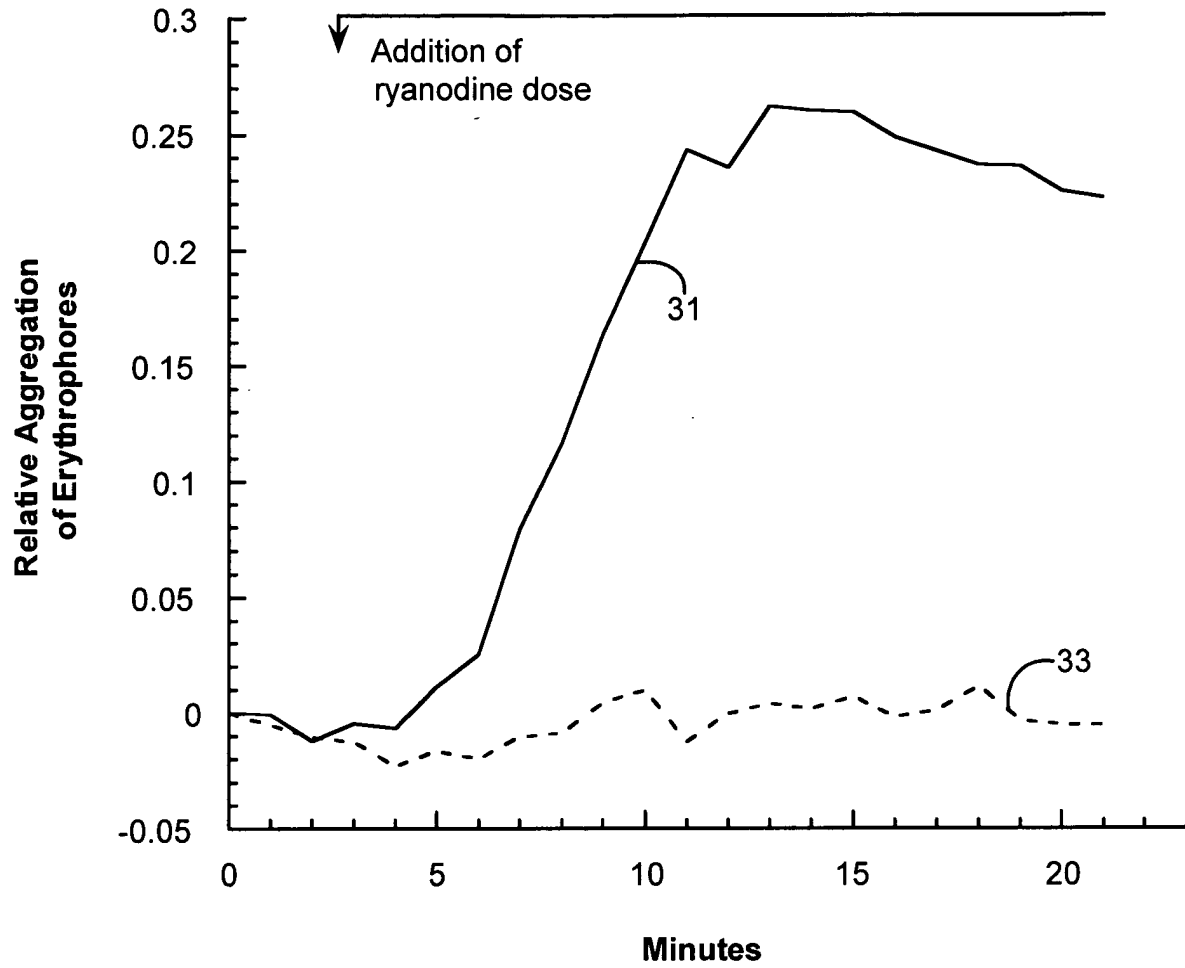
FIG. 36



**FIG. 37**

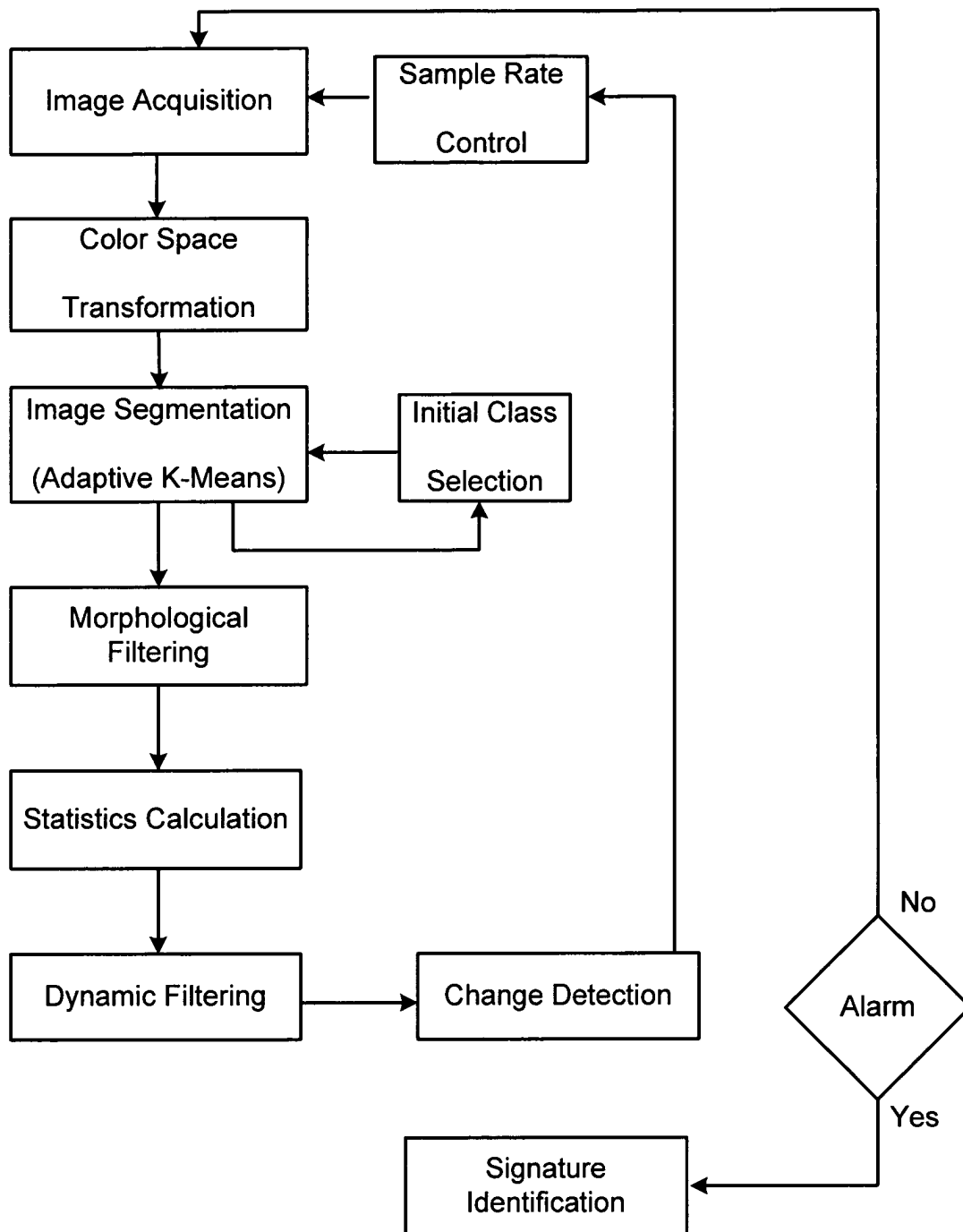


**FIG. 38**

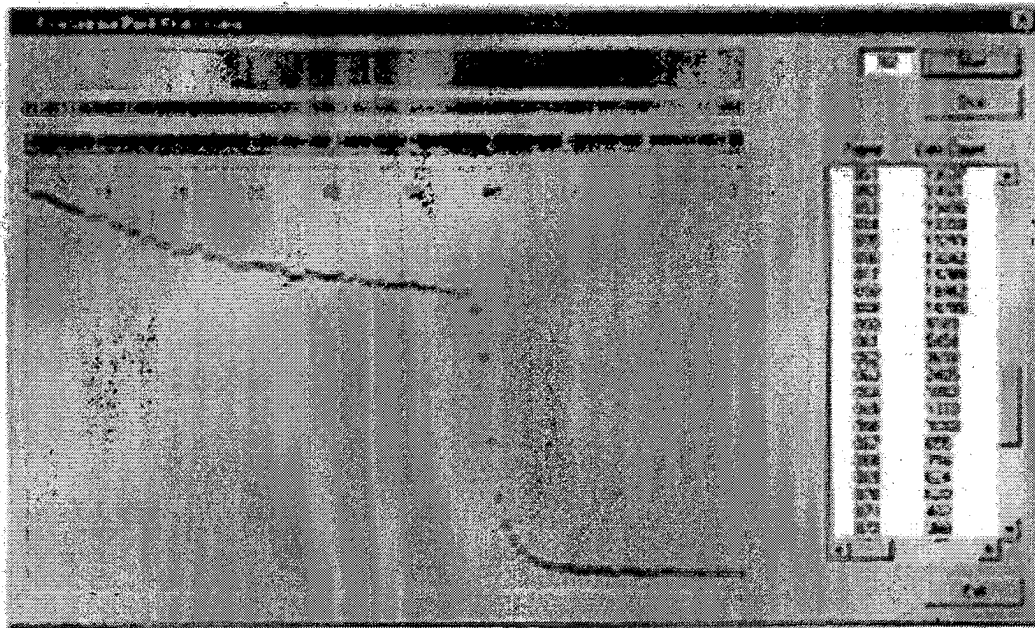


**FIG. 39**



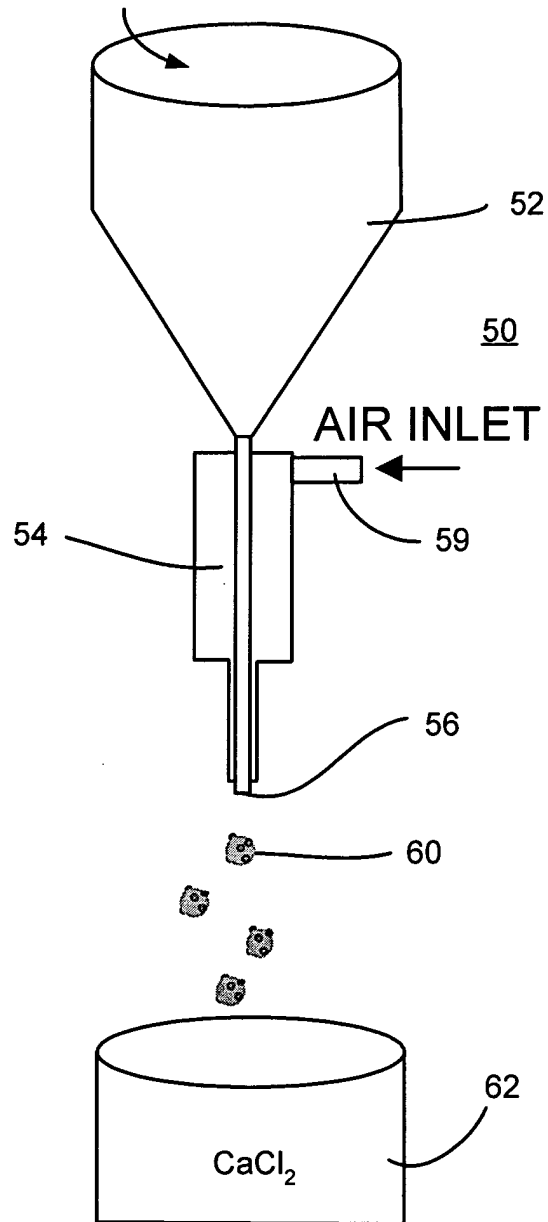


**FIG. 40**

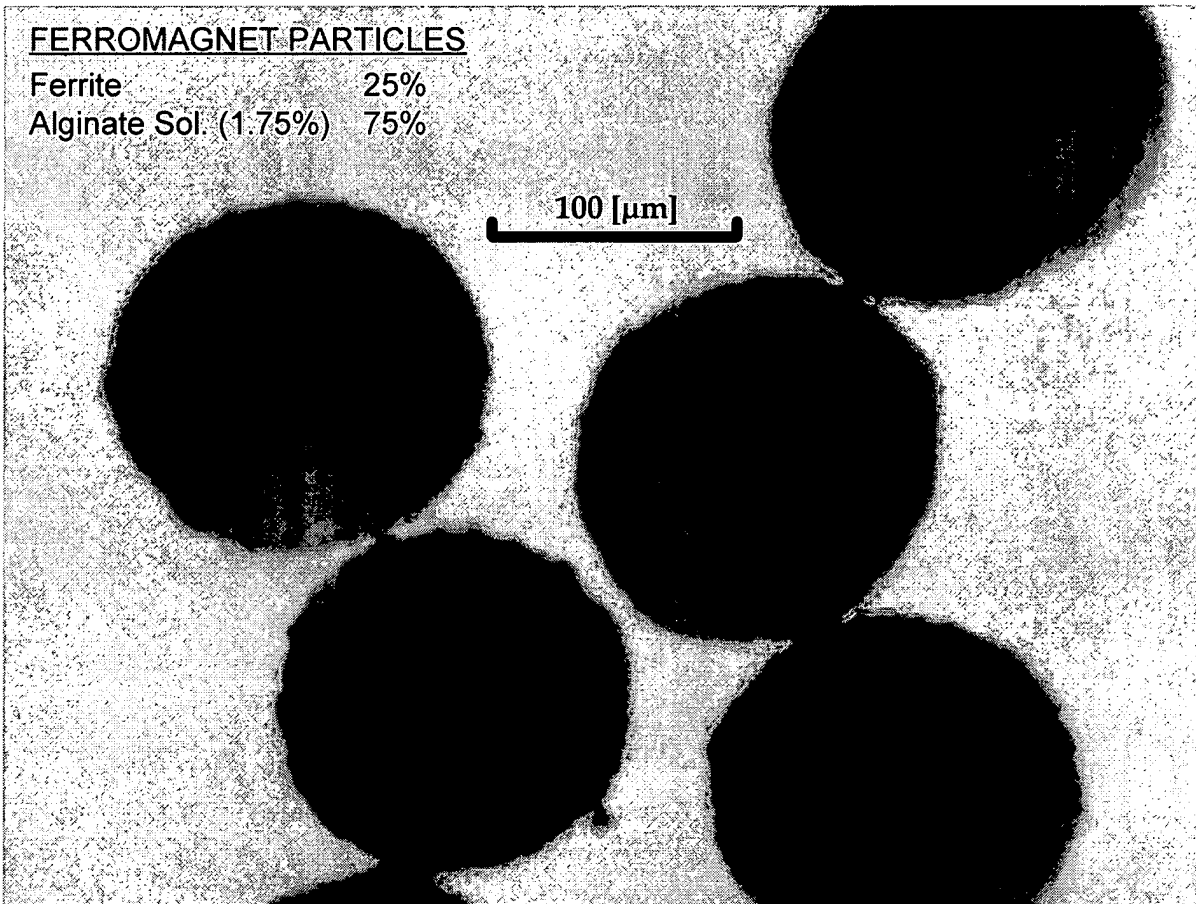


**FIG. 41**

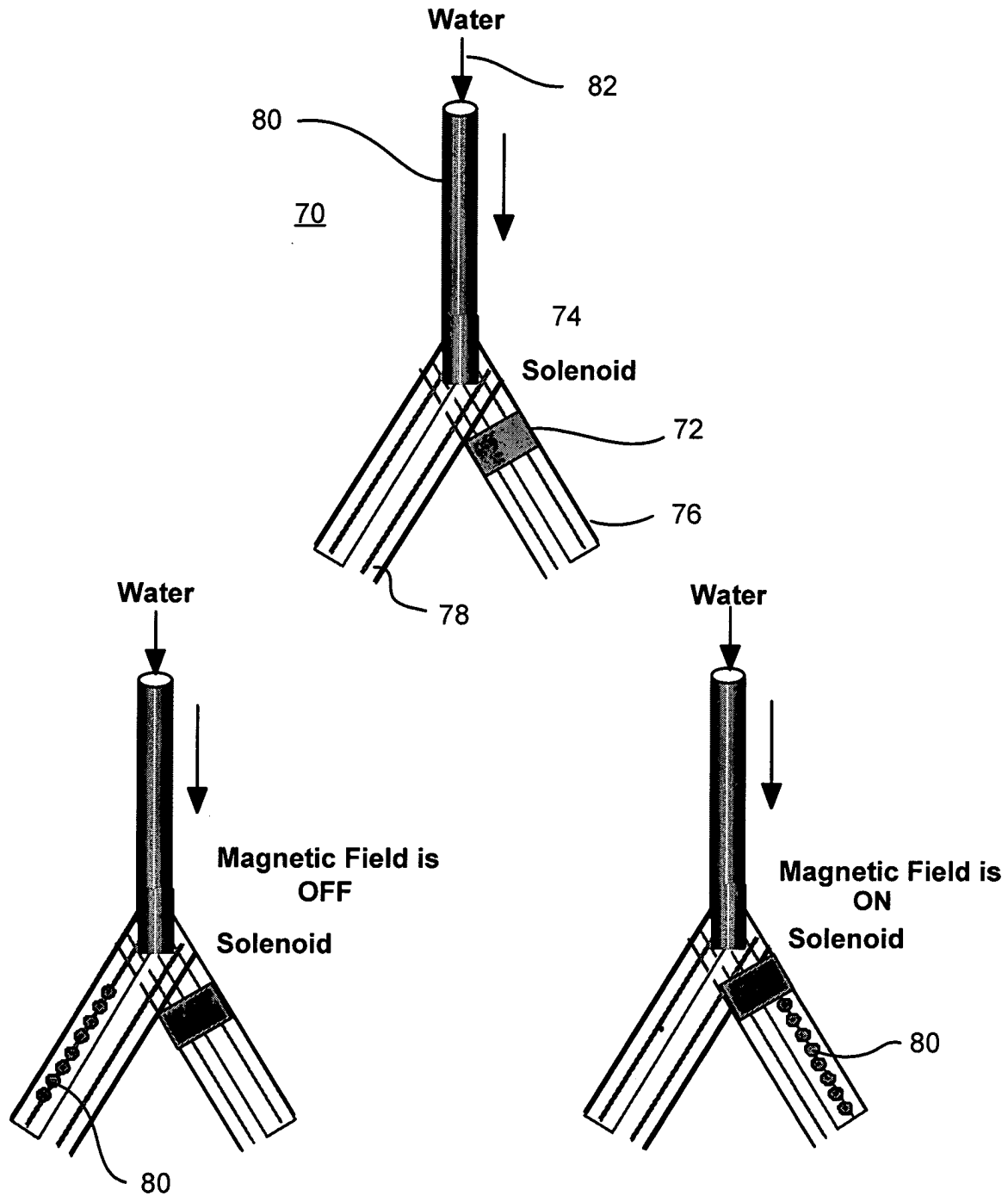
## Na-ALGINATE FERROMAGNETIC



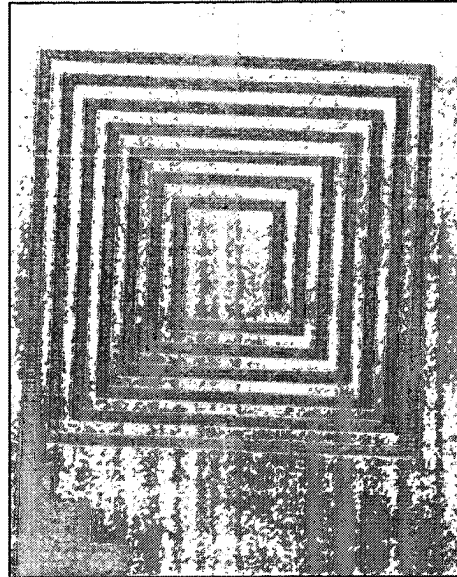
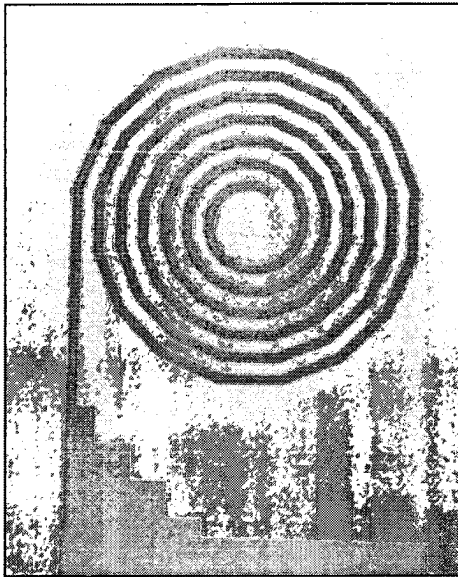
**FIG. 42**



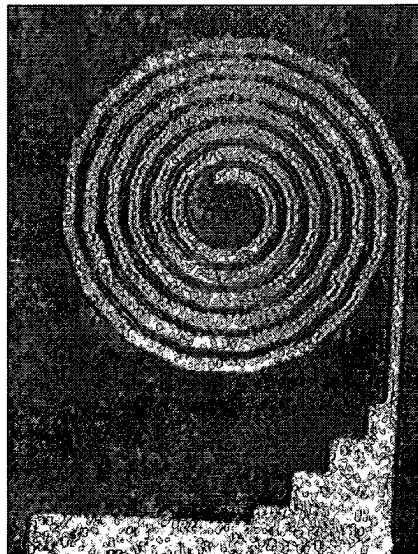
**FIG. 43**



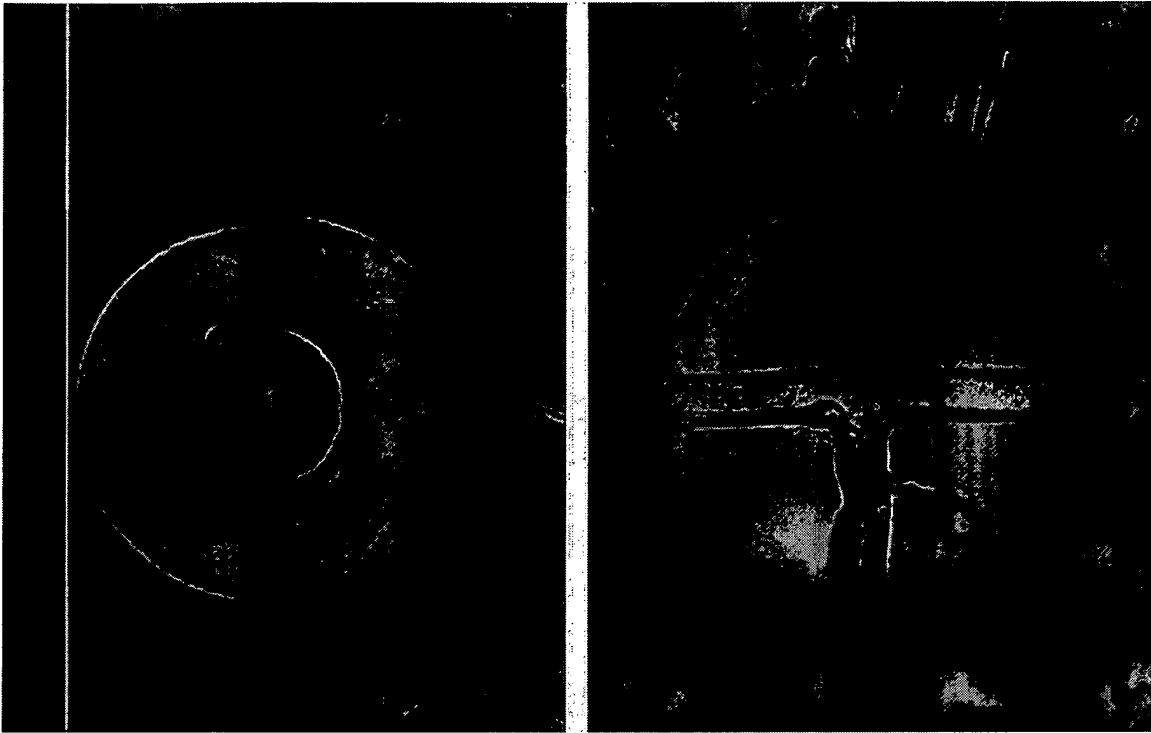
**FIG. 44**



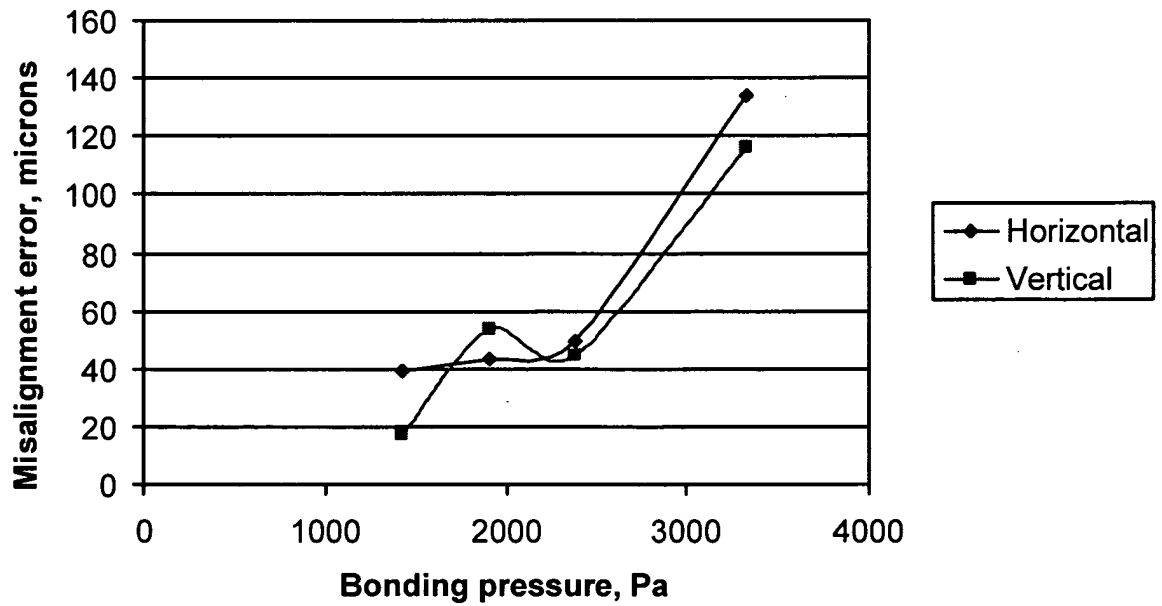
**FIG. 45**



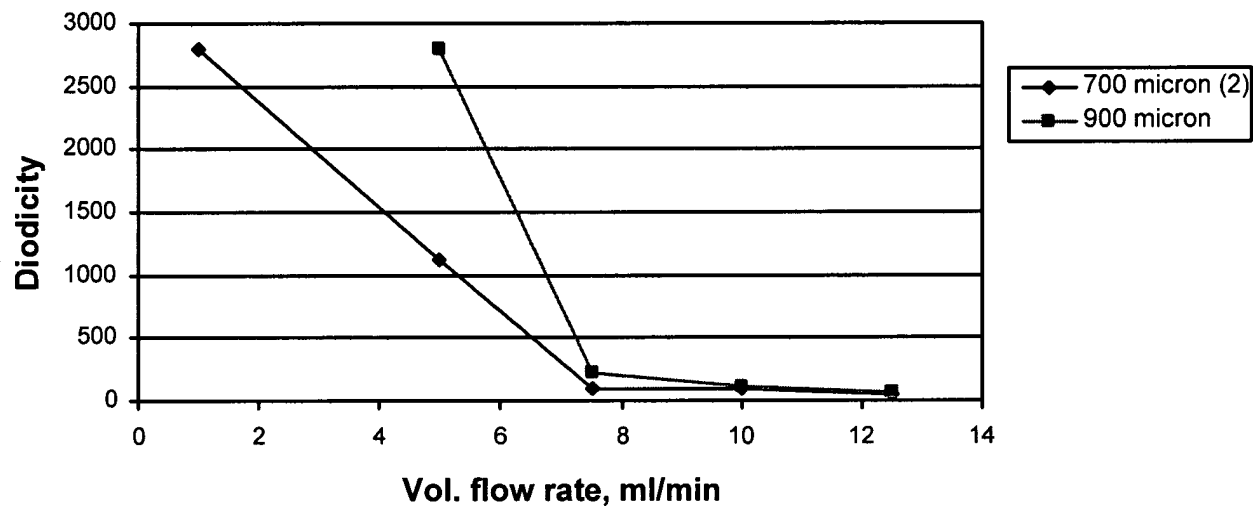
**FIG. 46**



**FIG. 47**

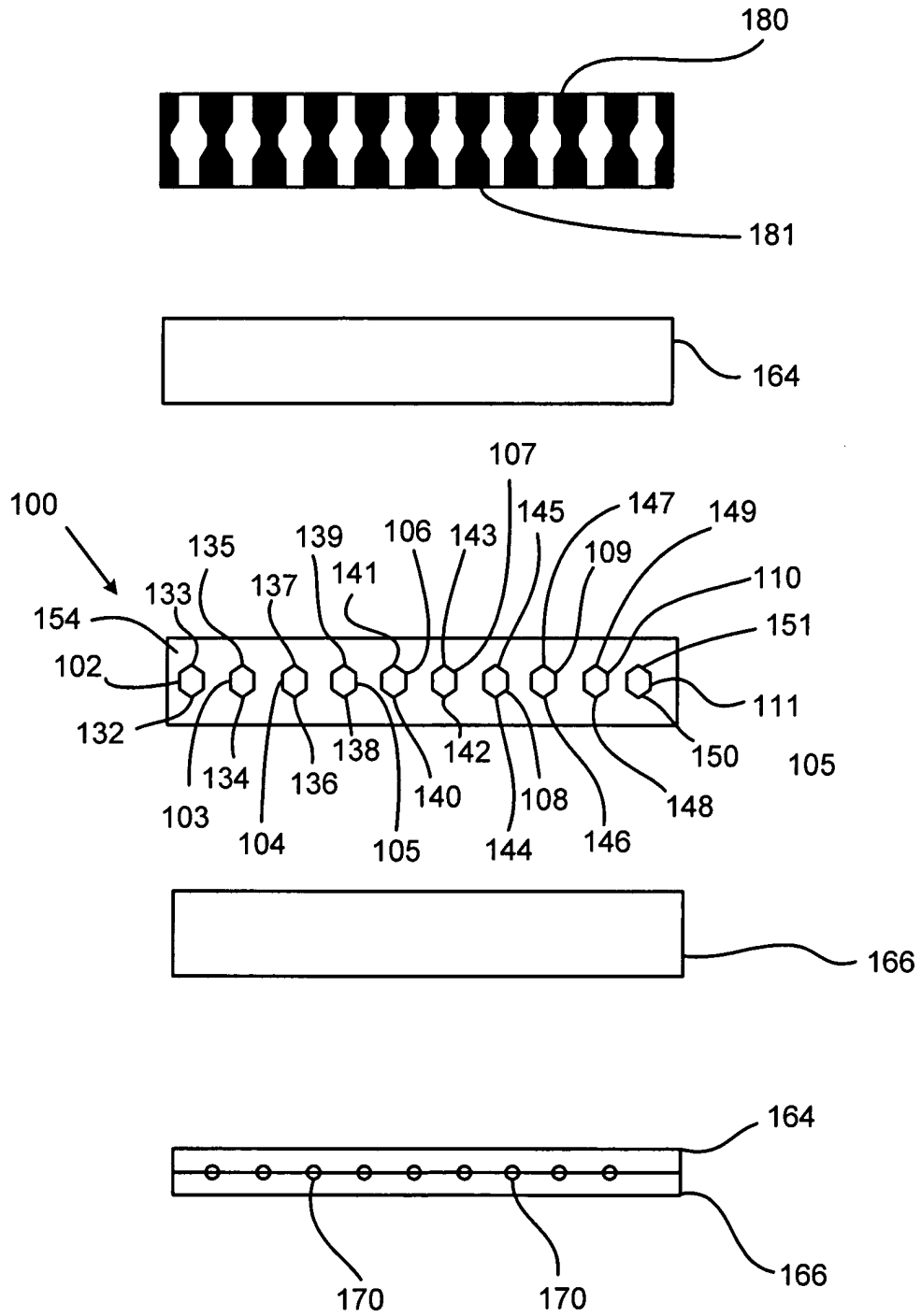


**FIG. 48**

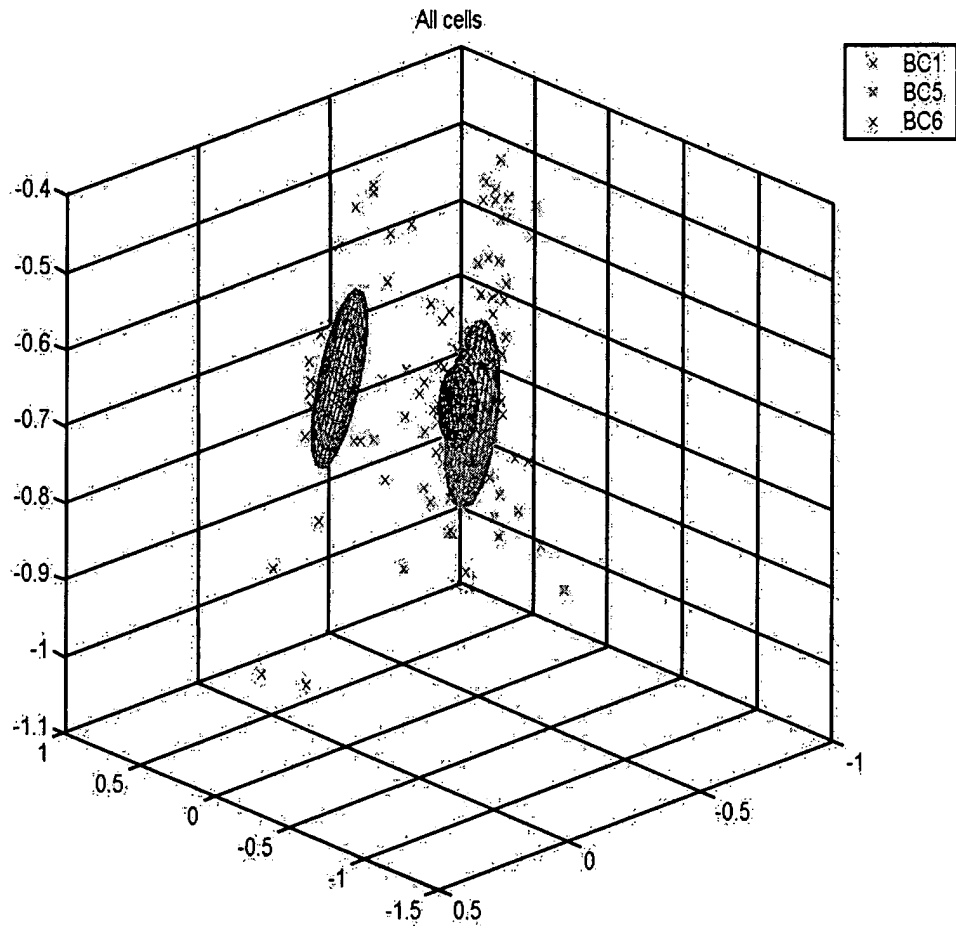


**FIG. 49**

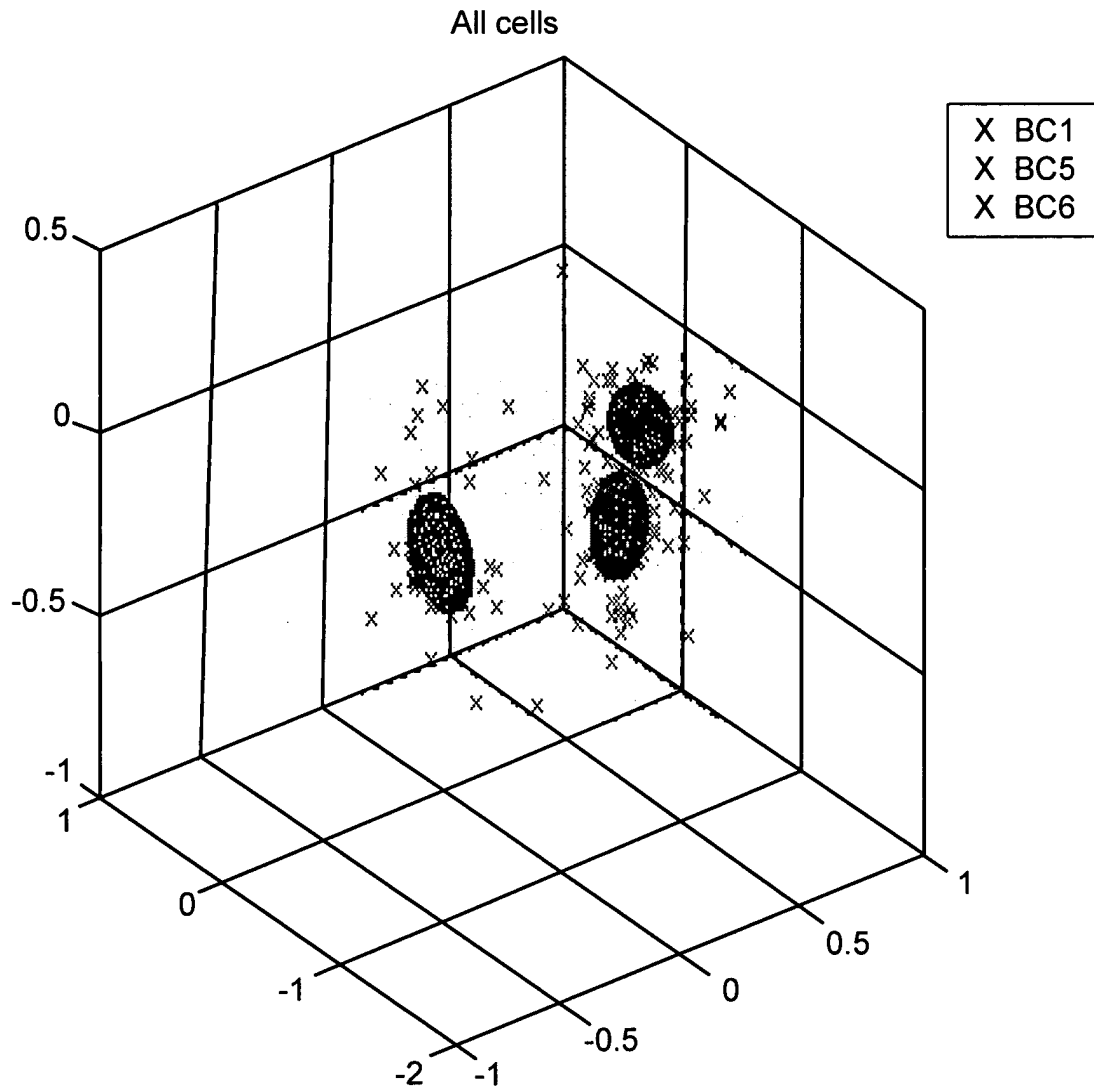




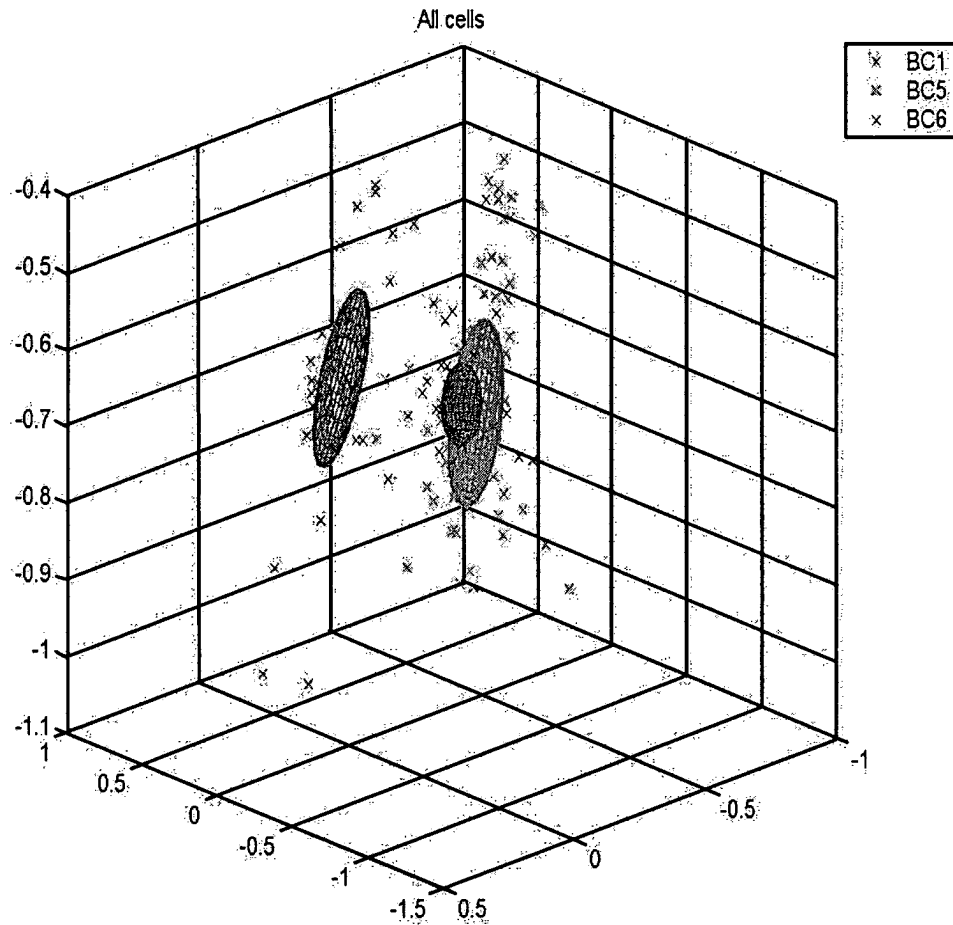
**FIG. 50**



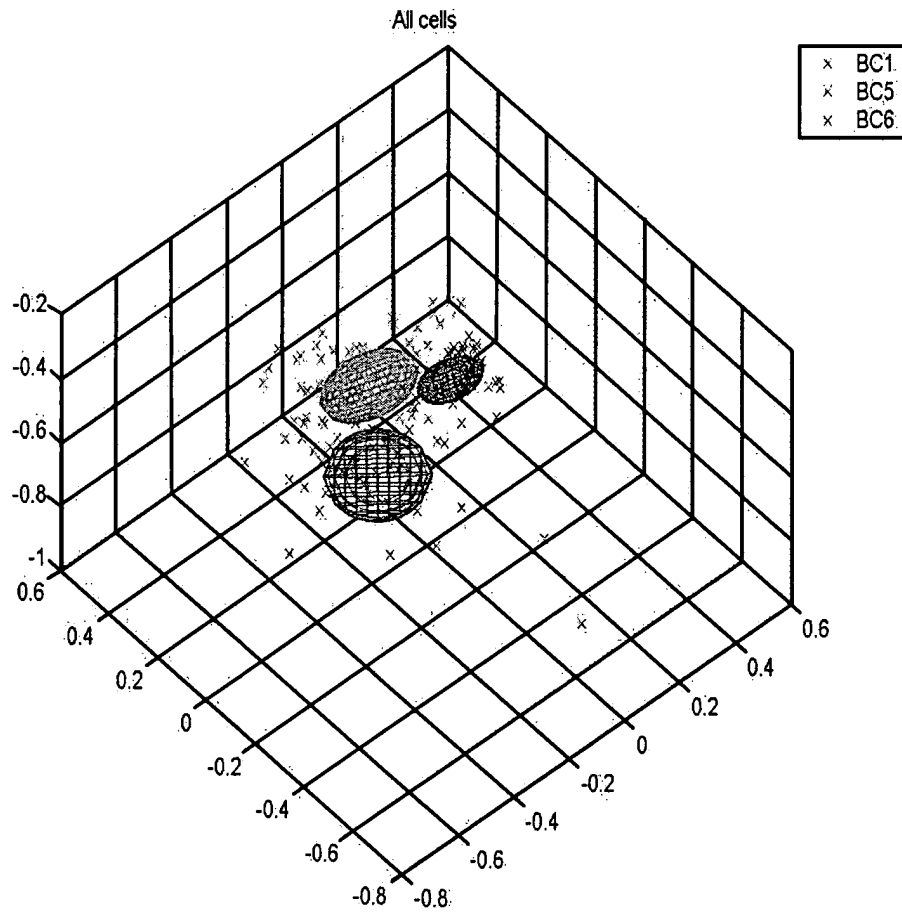
**FIG. 51**



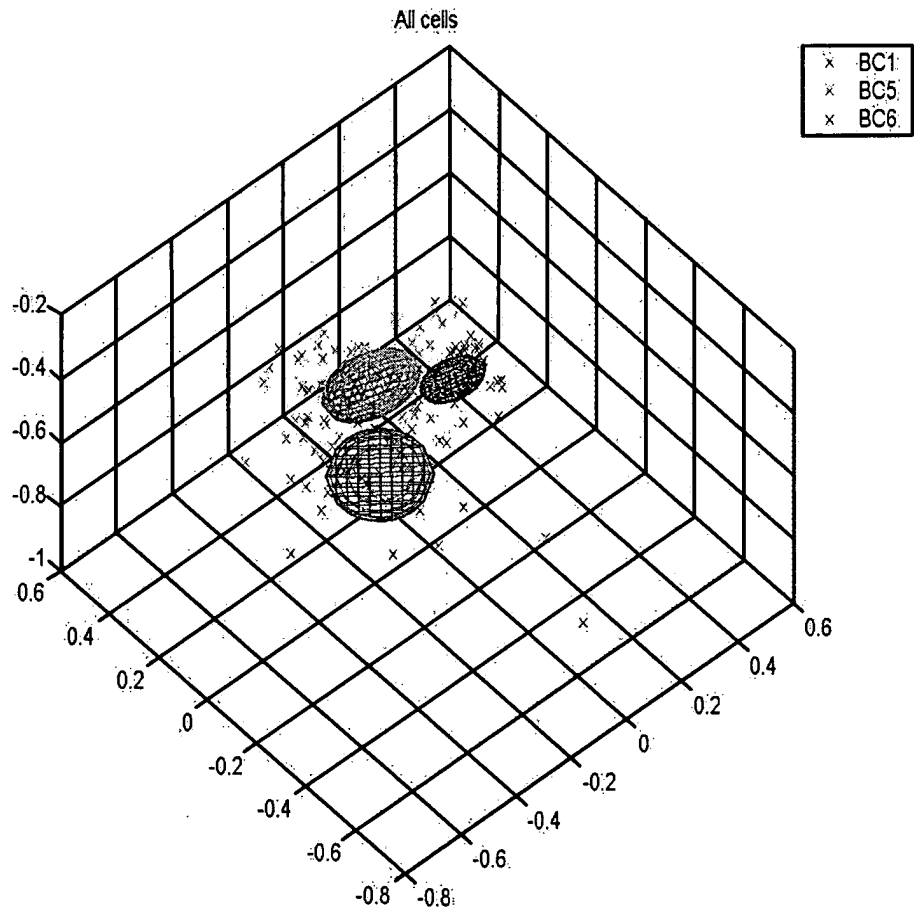
**FIG. 52**



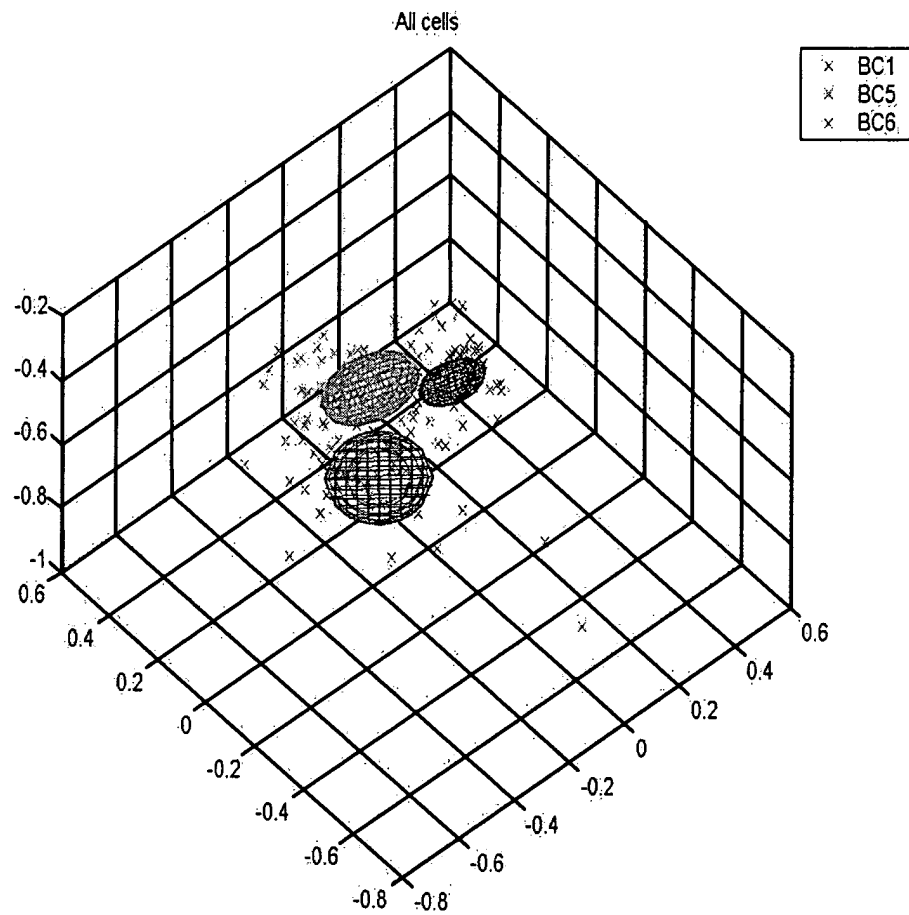
**FIG. 53**



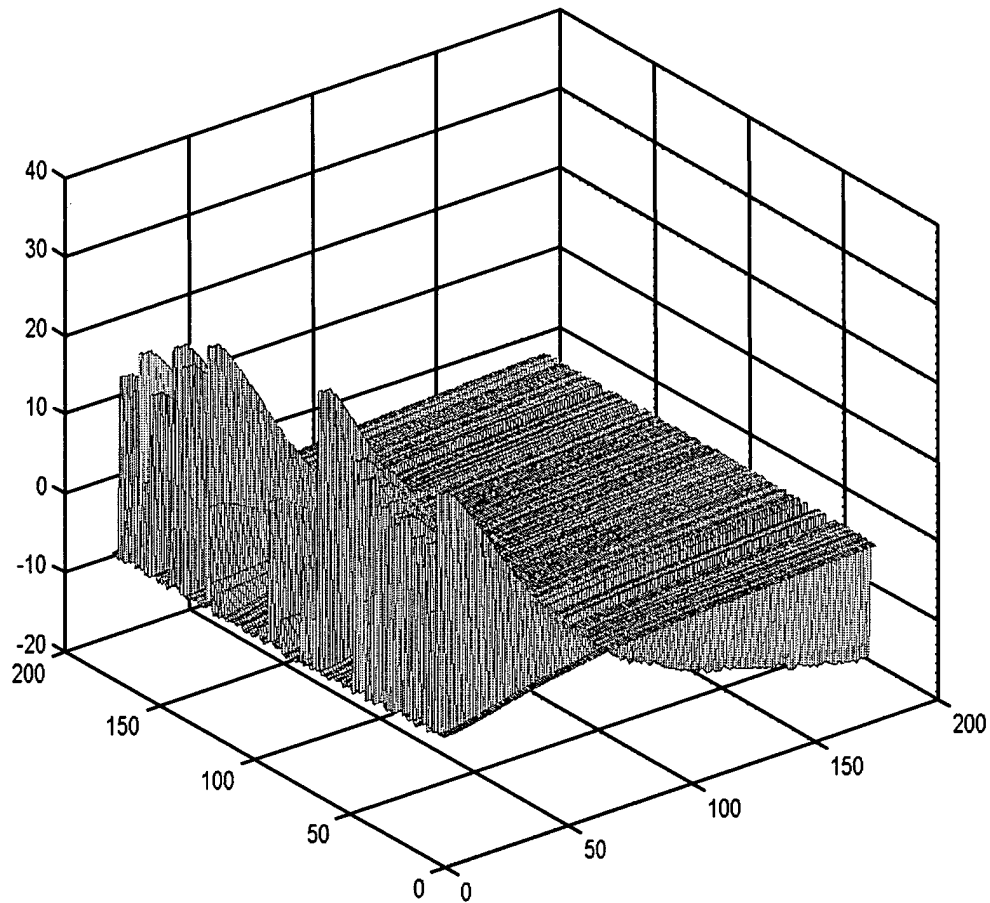
**FIG. 54**



**FIG. 55**

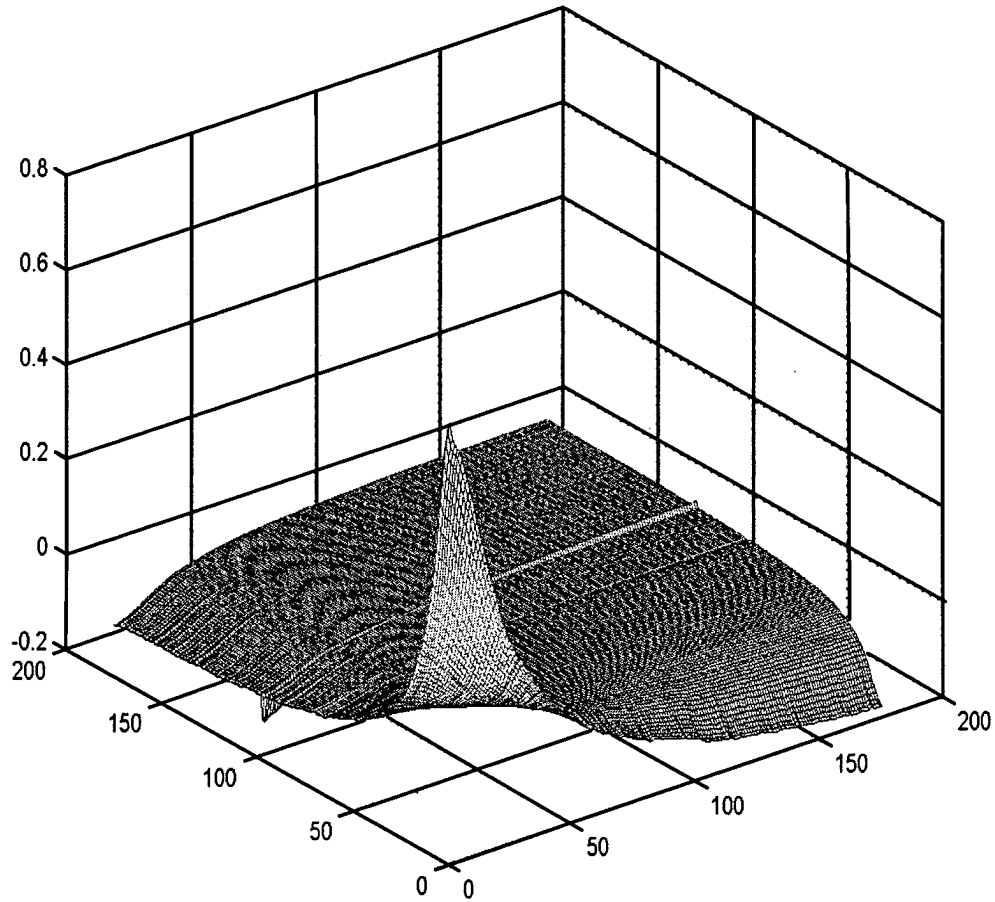


**FIG. 56**

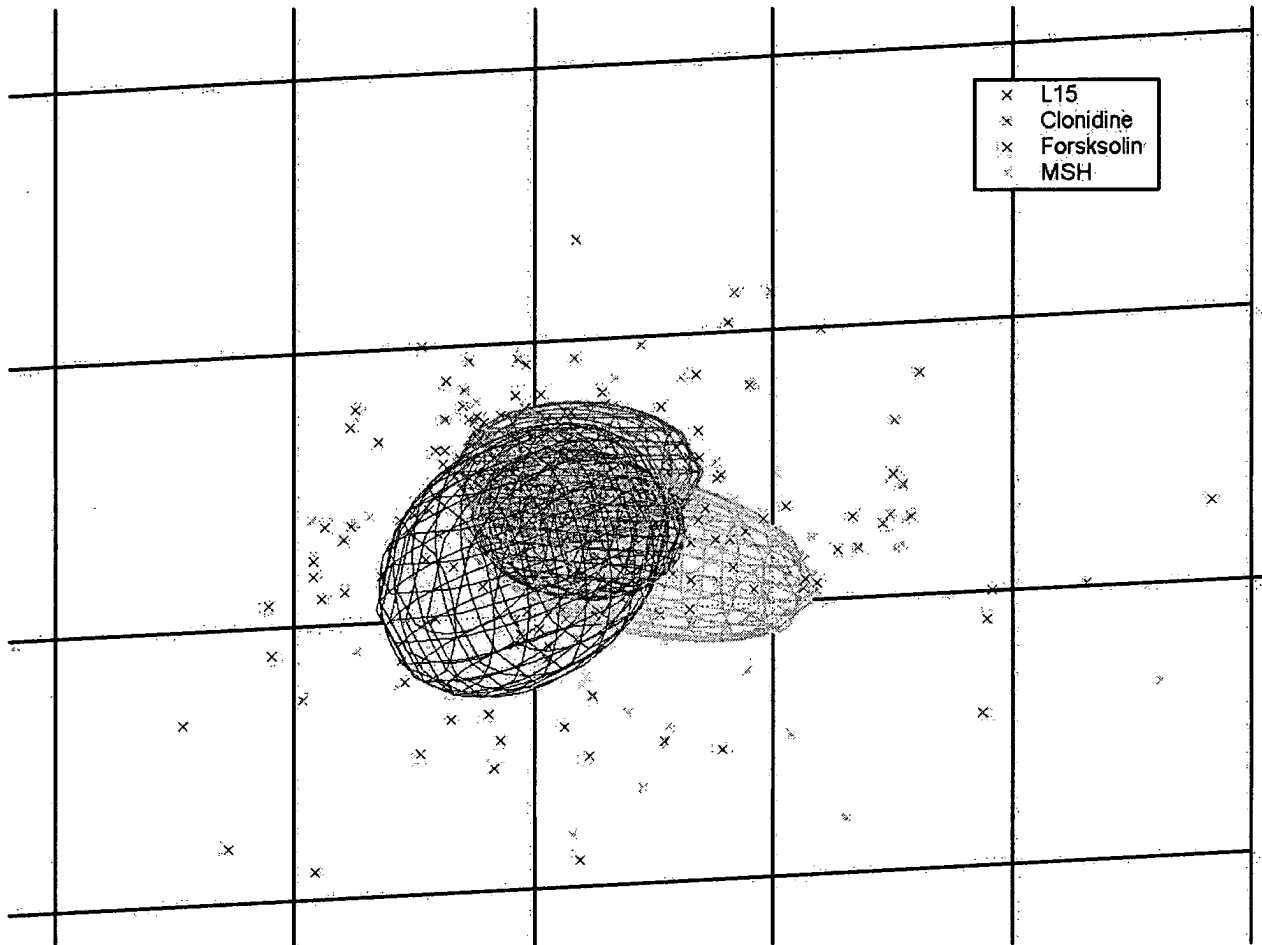


**FIG. 57A**

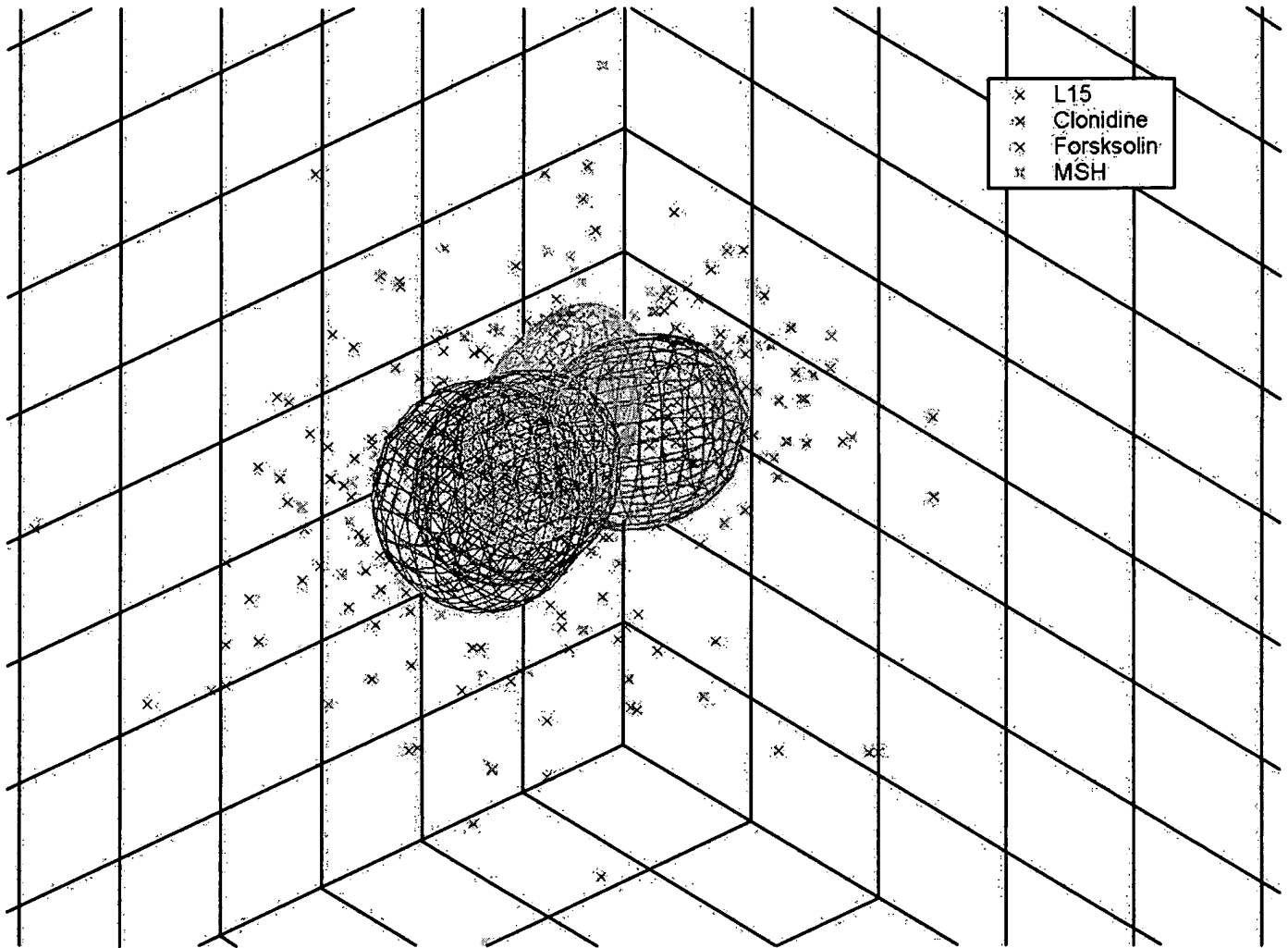




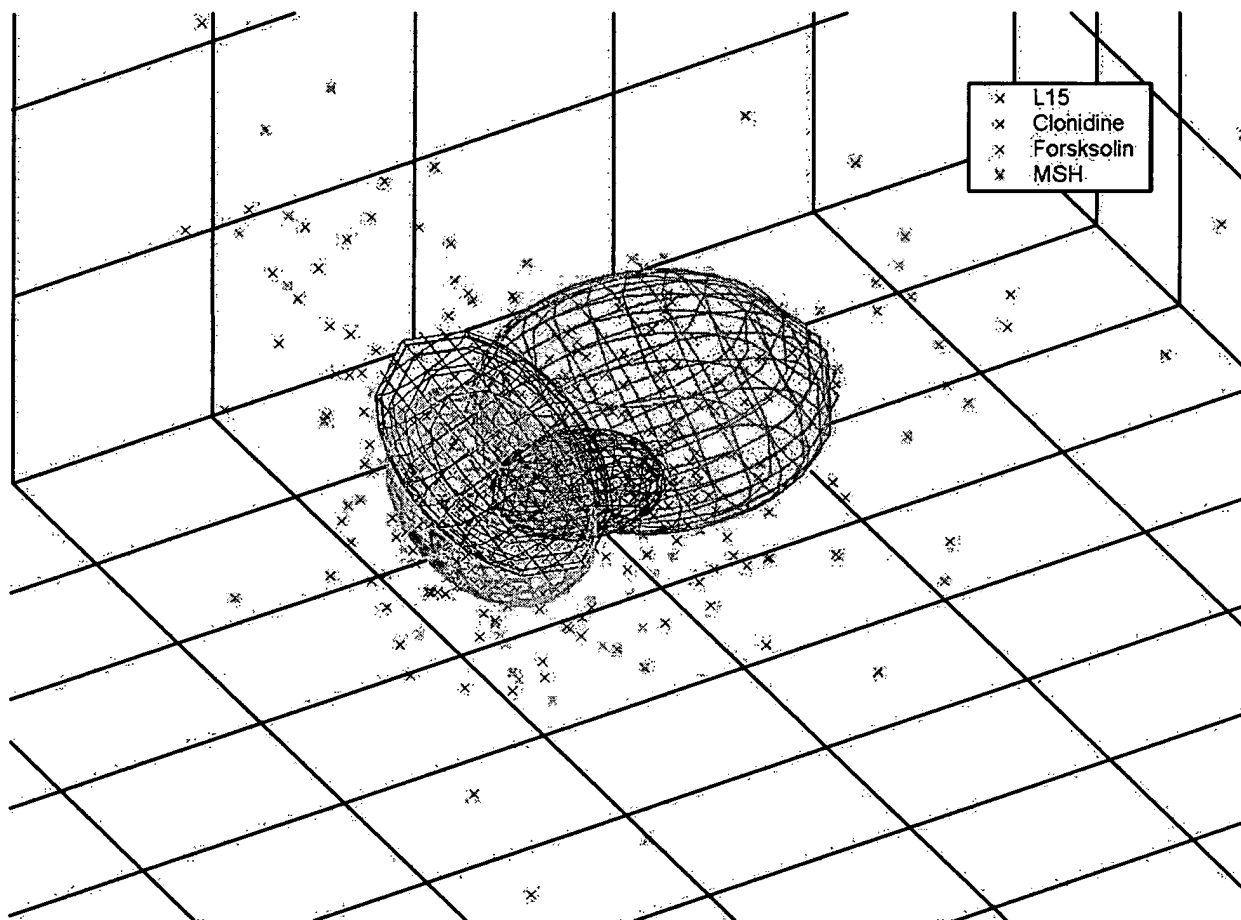
**FIG. 57B**



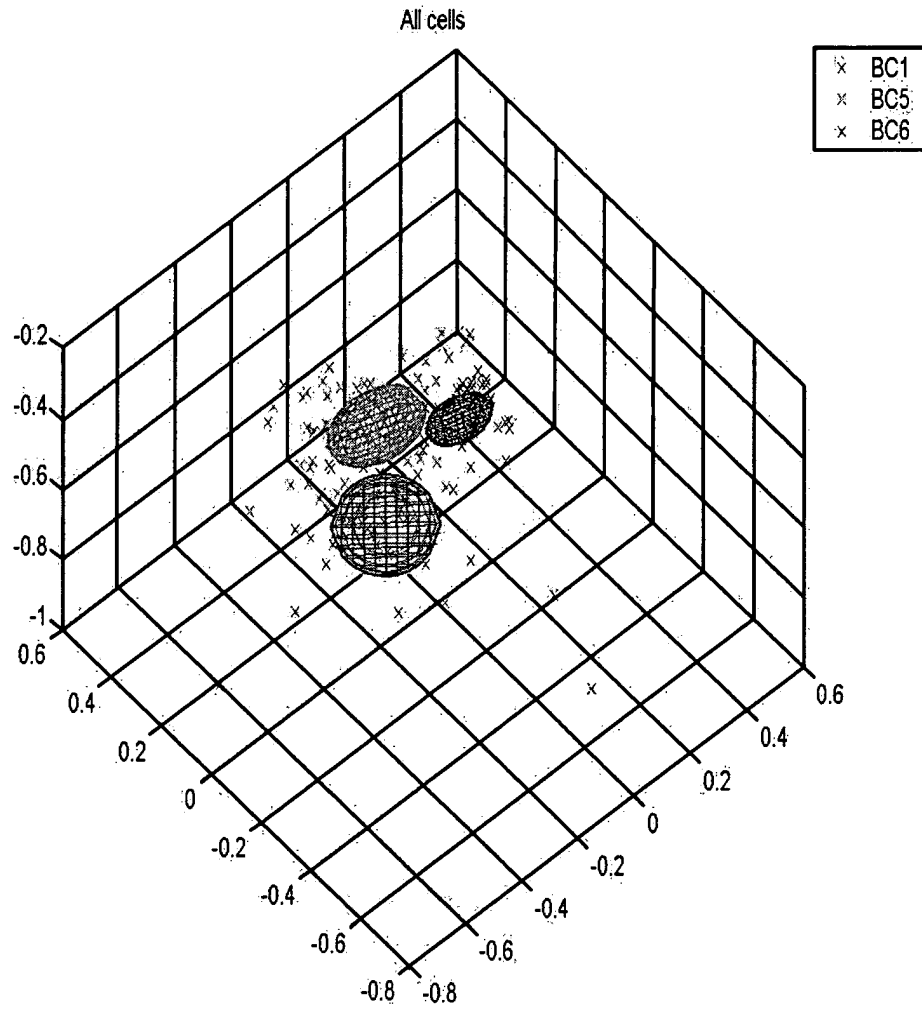
**FIG. 58**



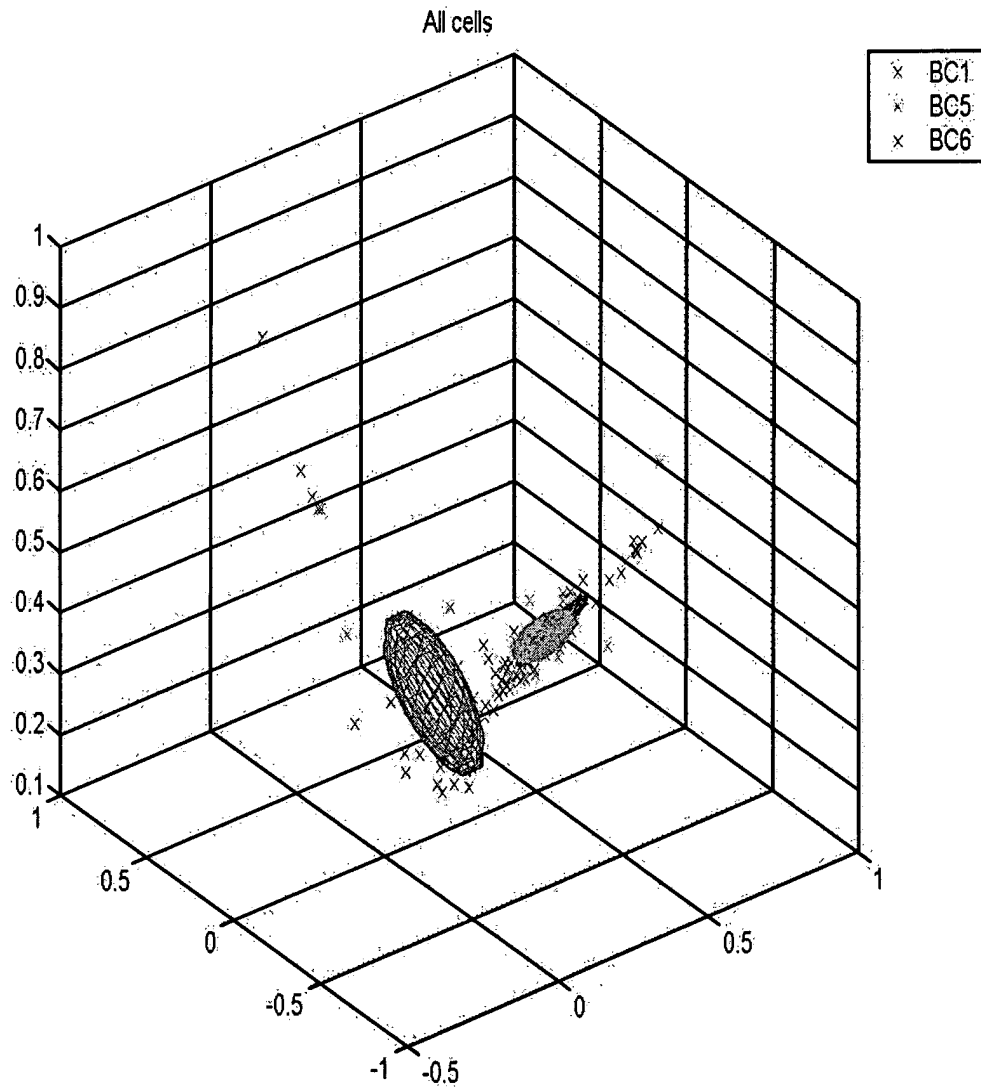
**FIG. 59**



**FIG. 60**



**FIG. 61A**



**FIG. 61B**

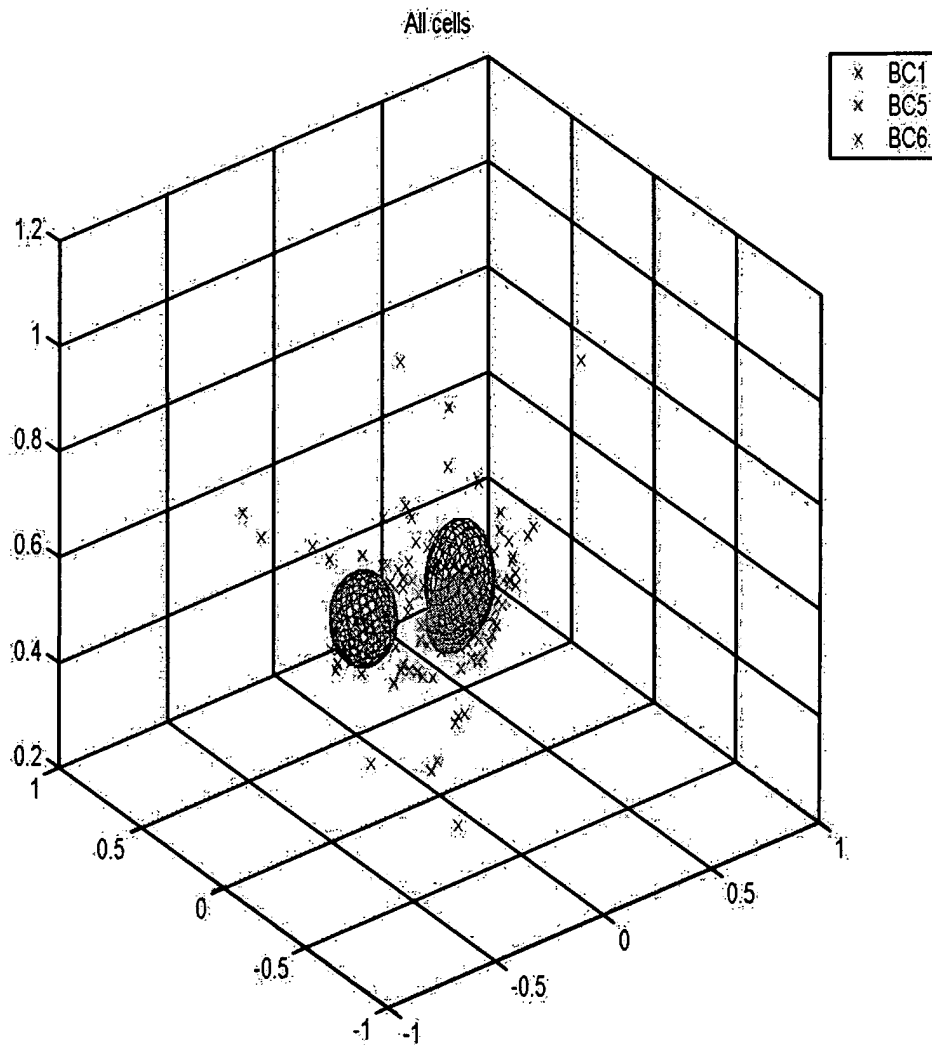
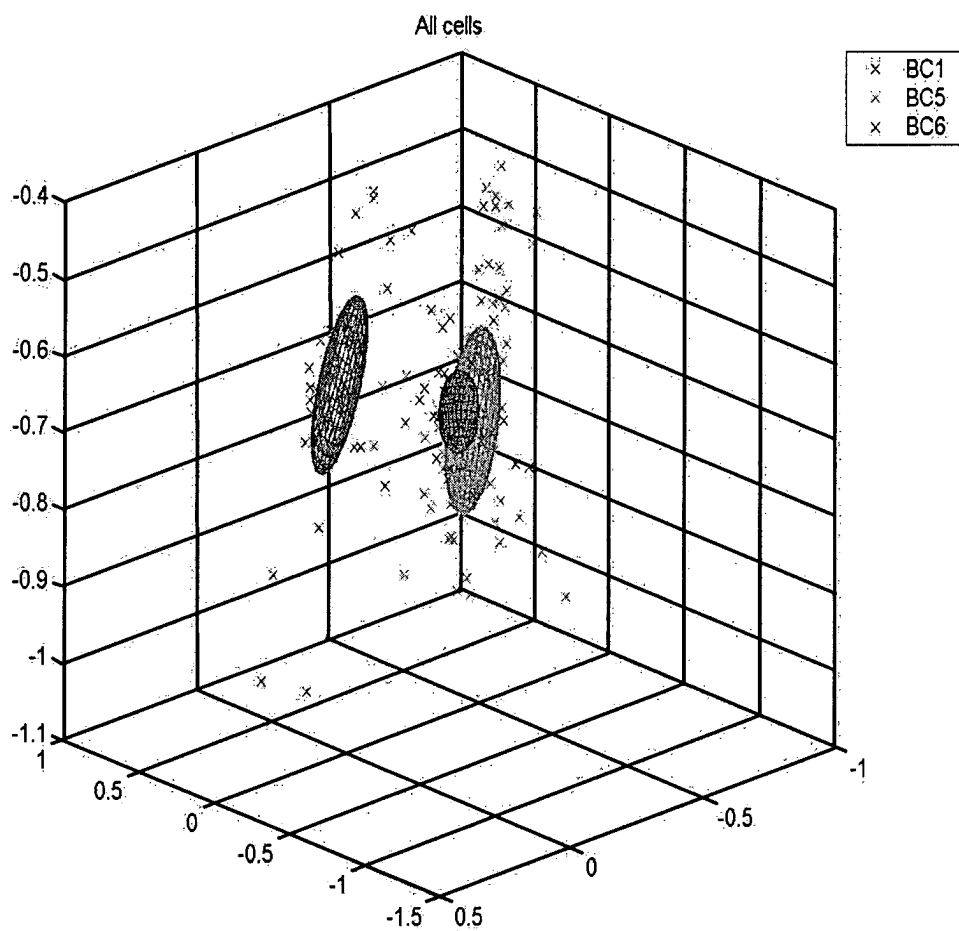
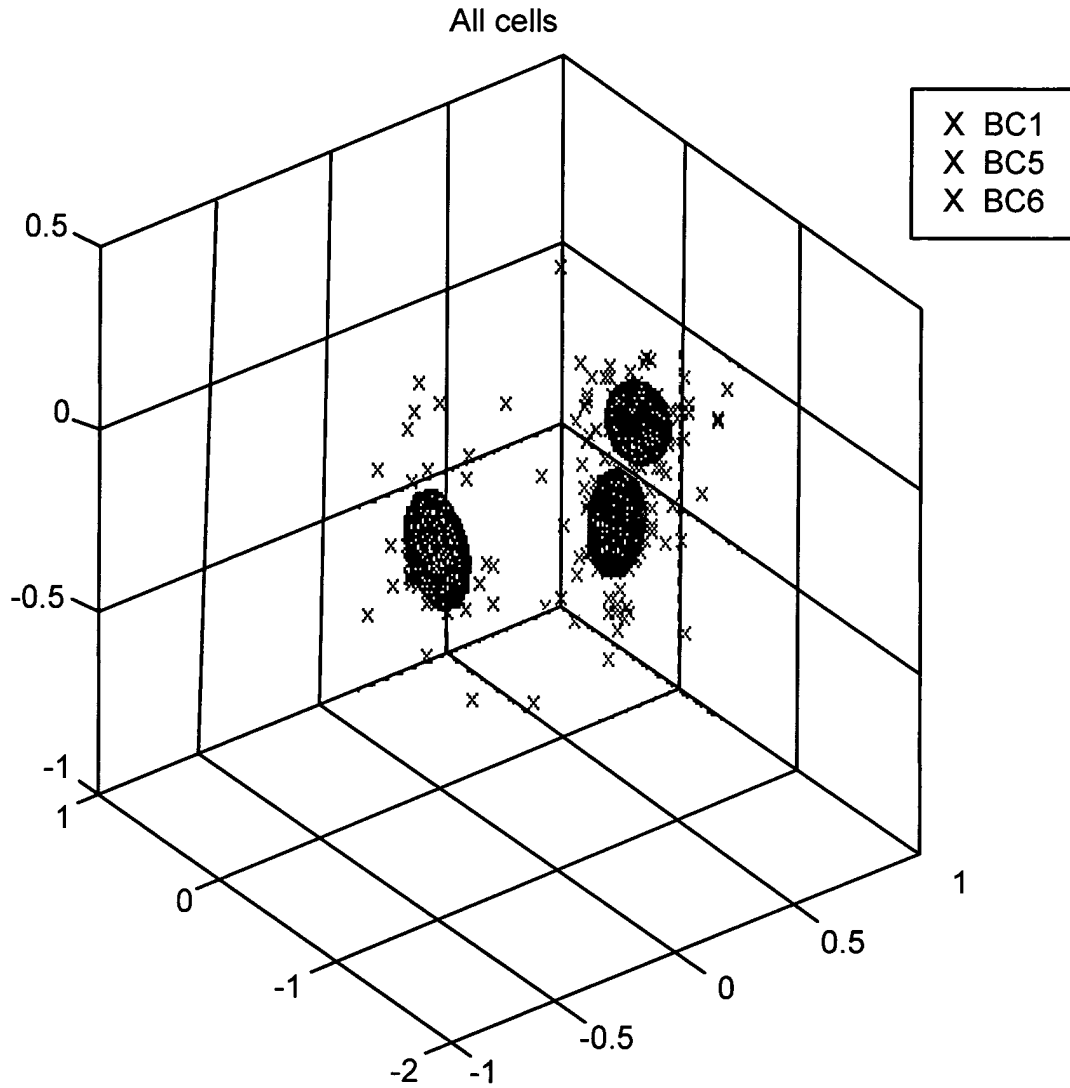


FIG. 61C



**FIG. 61D**





**FIG. 62**

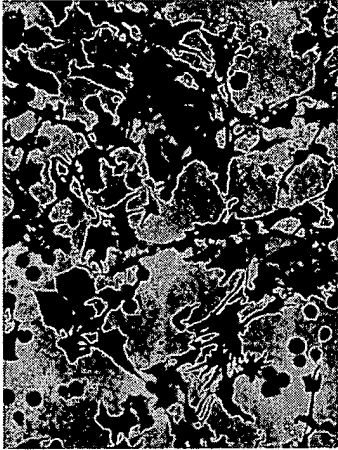


FIG. 63A

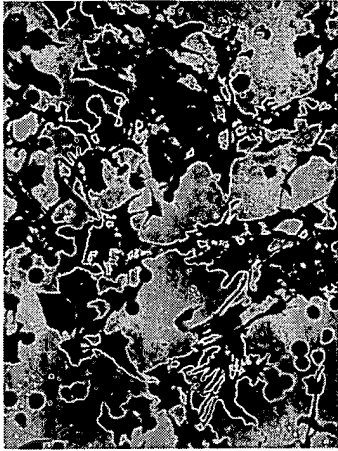


FIG. 63B

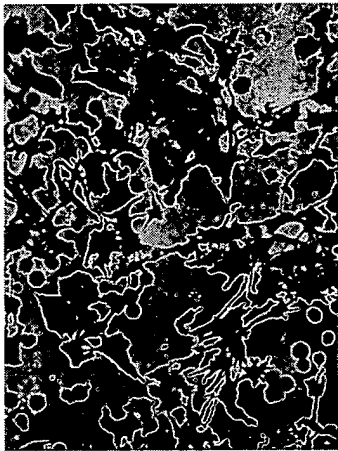


FIG. 63C

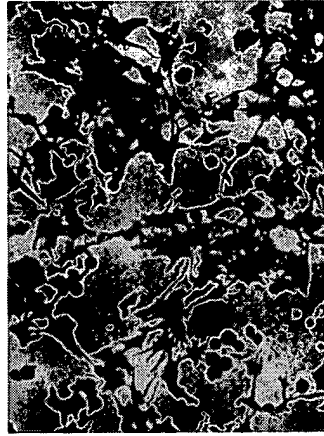


FIG. 63D

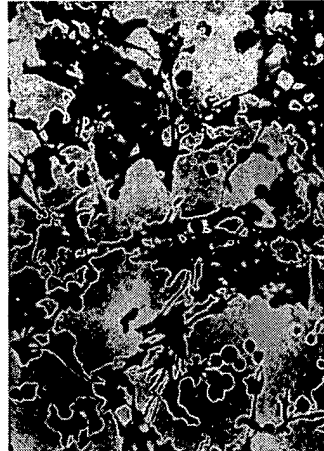


FIG. 63E

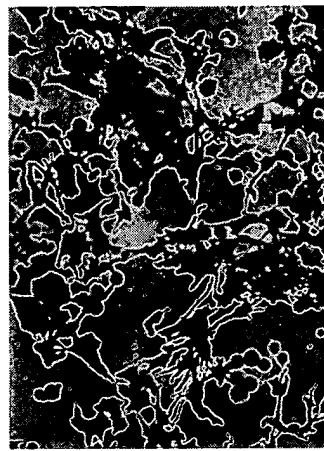
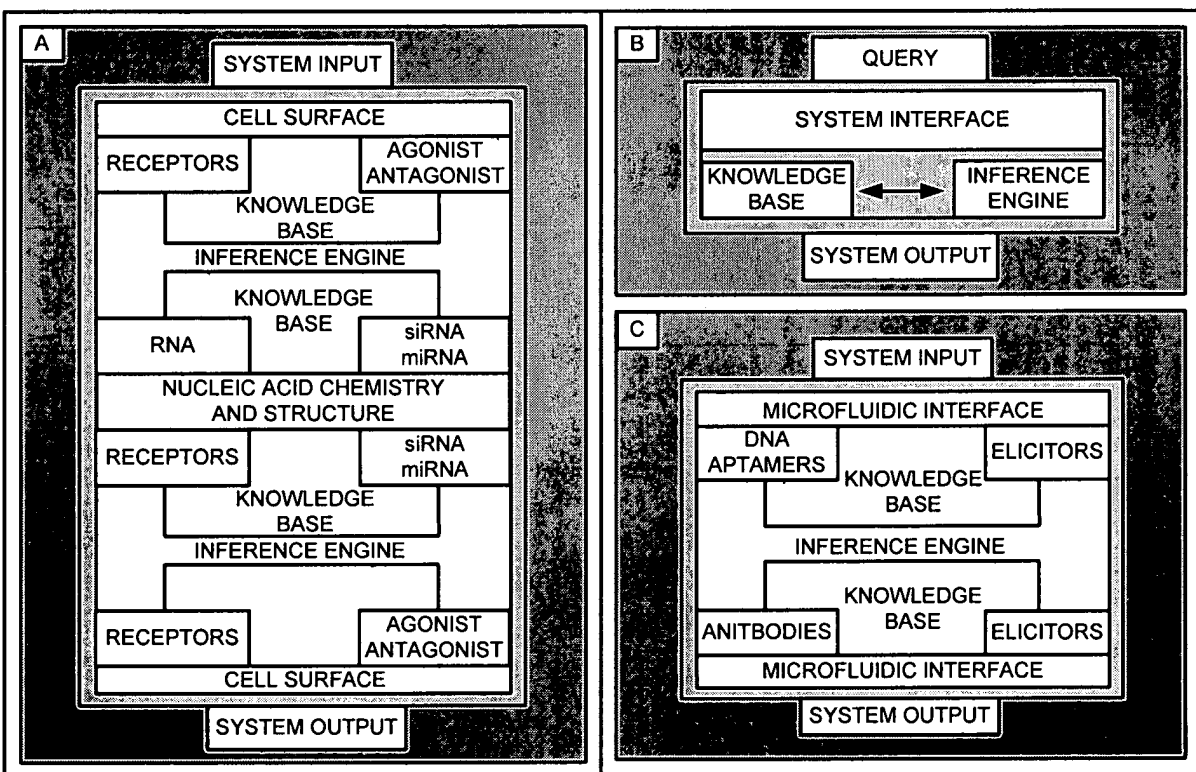
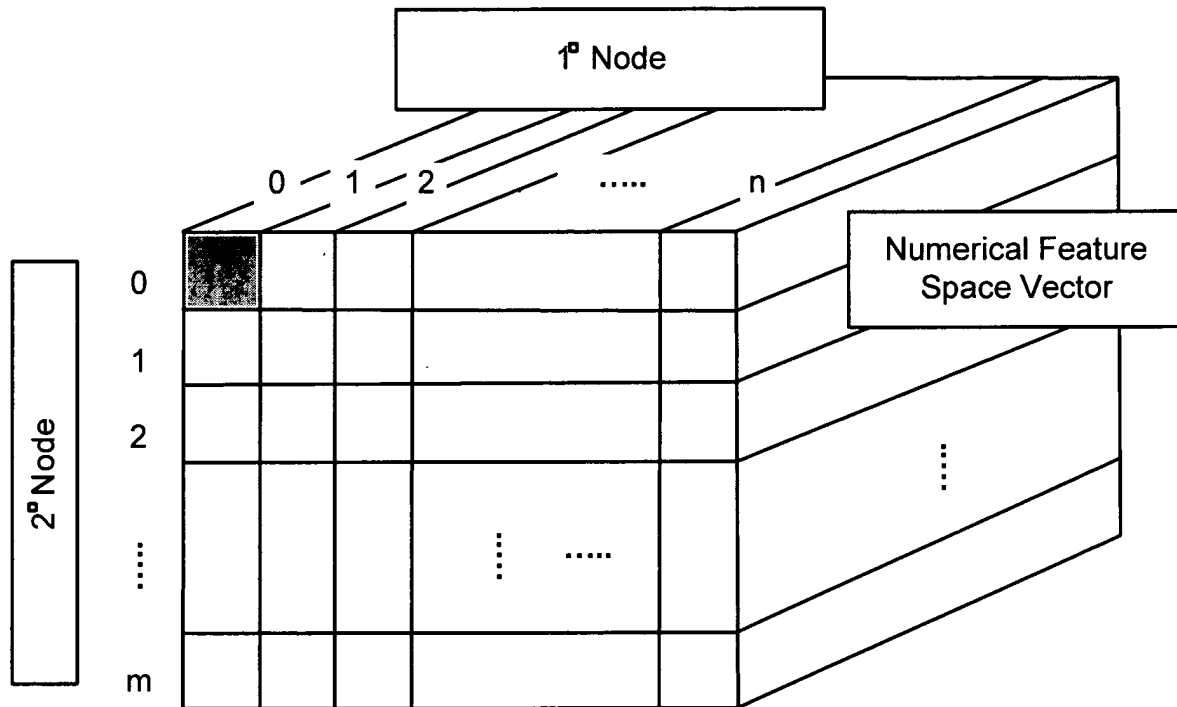


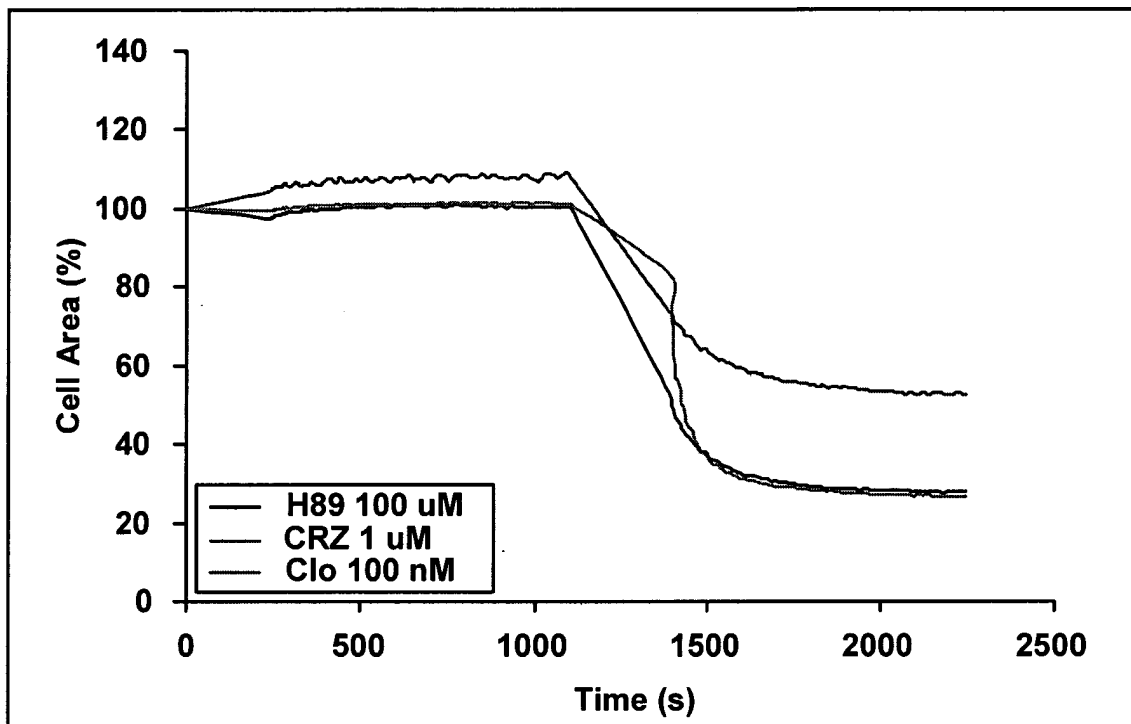
FIG. 63F



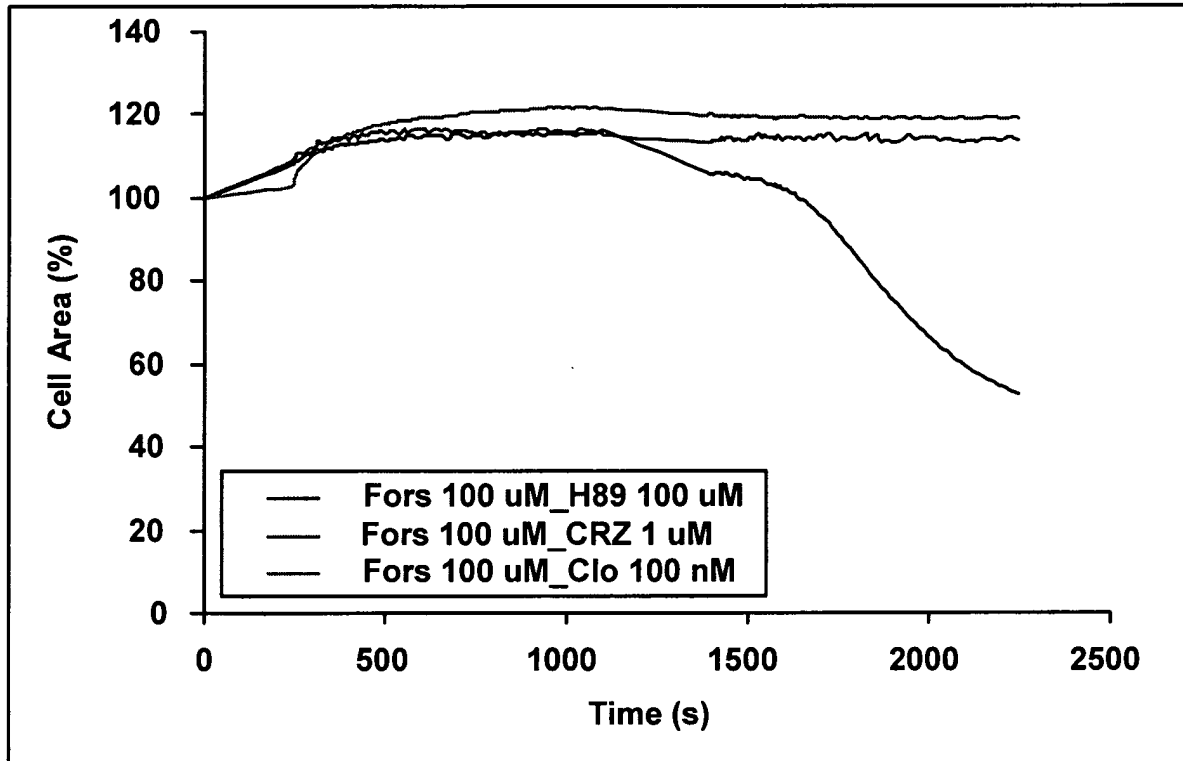
**FIG. 64**



**FIG. 65**



**FIG. 66A**



**FIG. 66B**

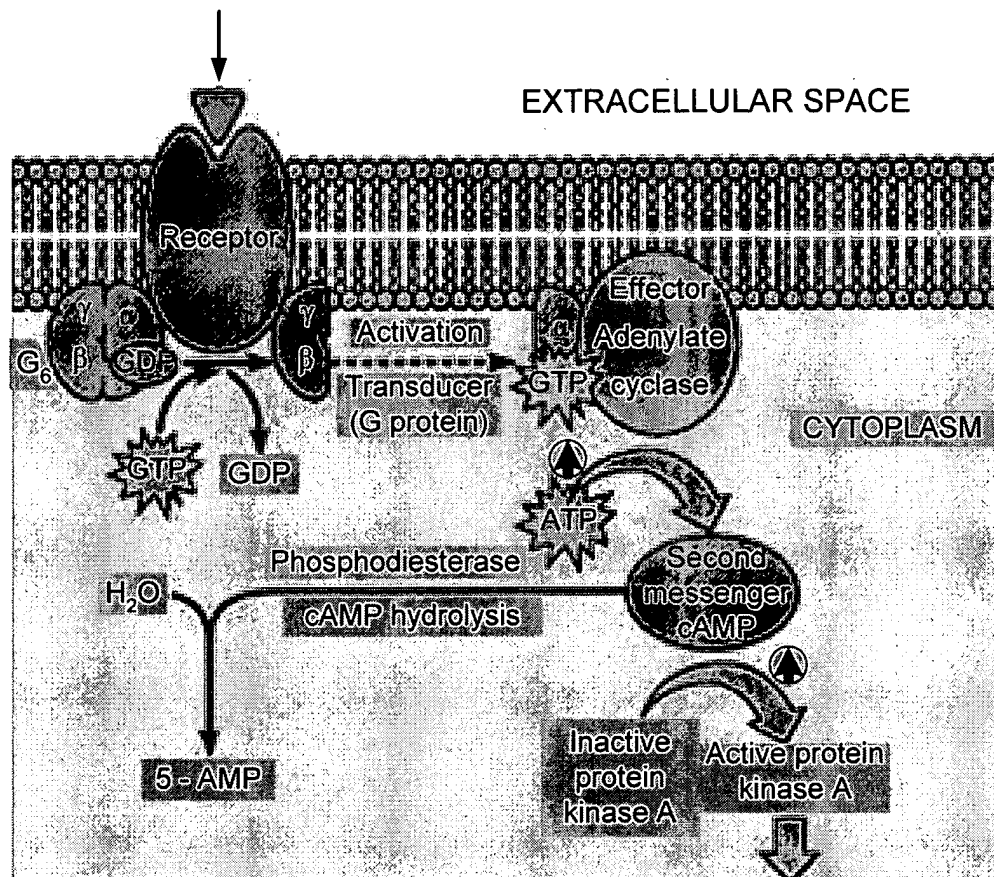
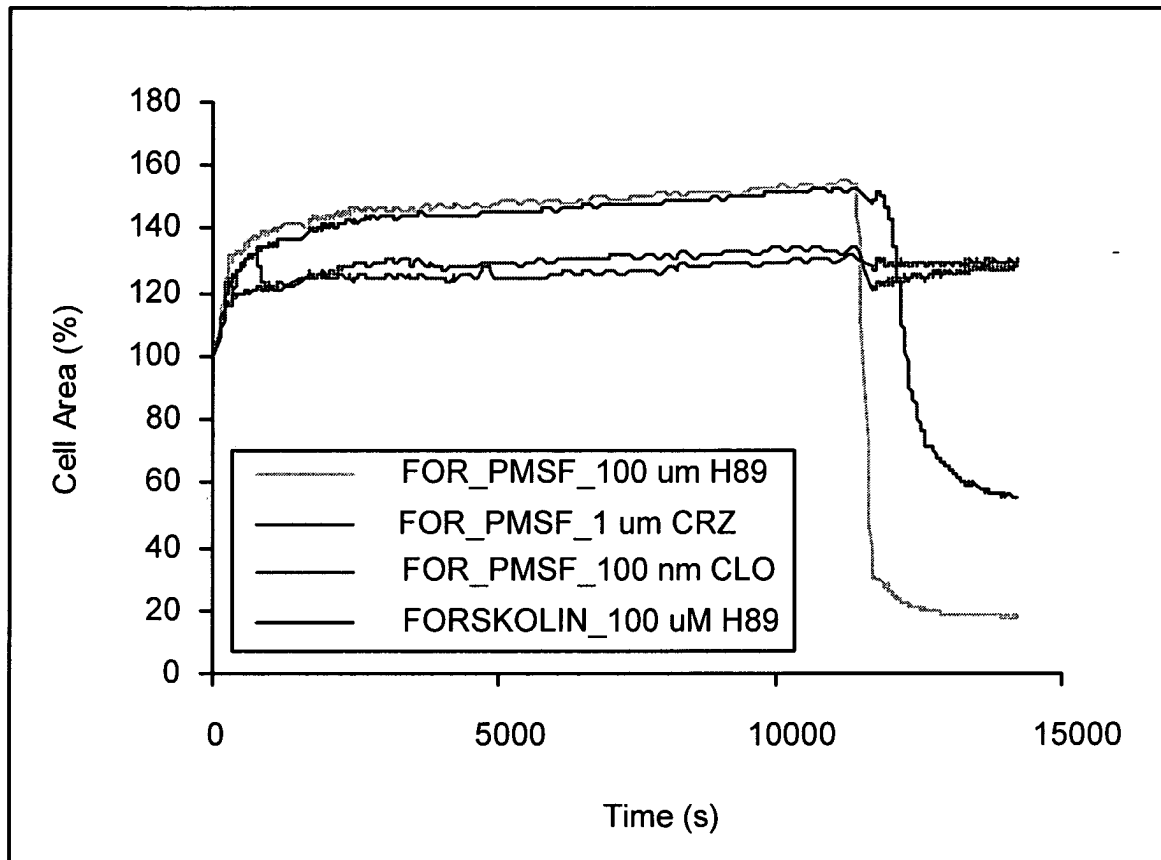
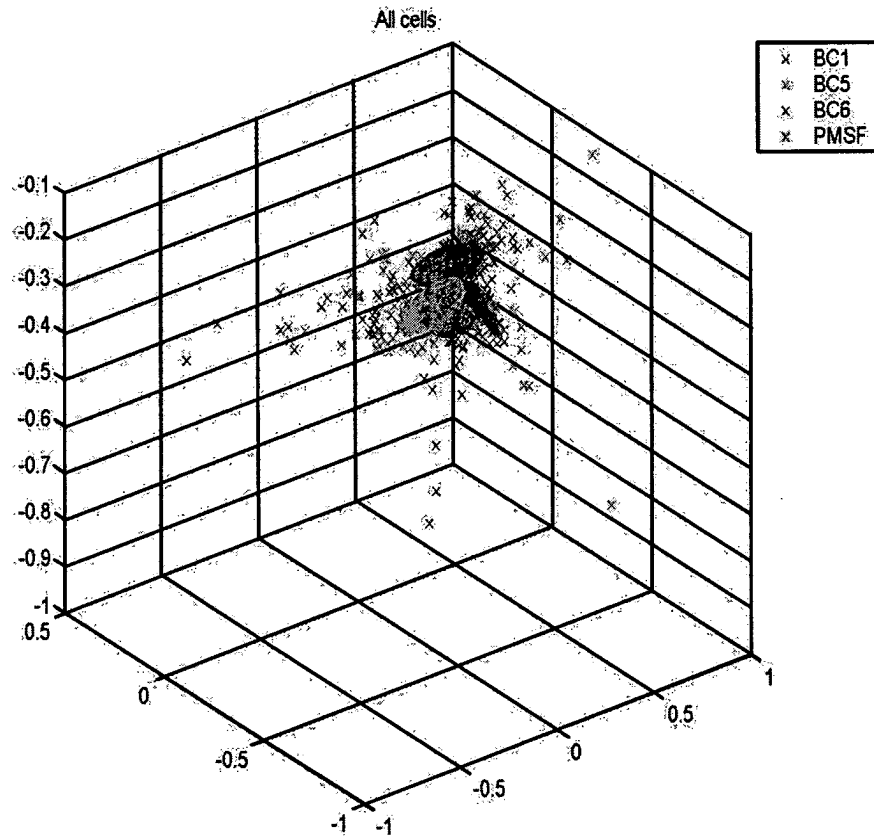


FIG. 66C

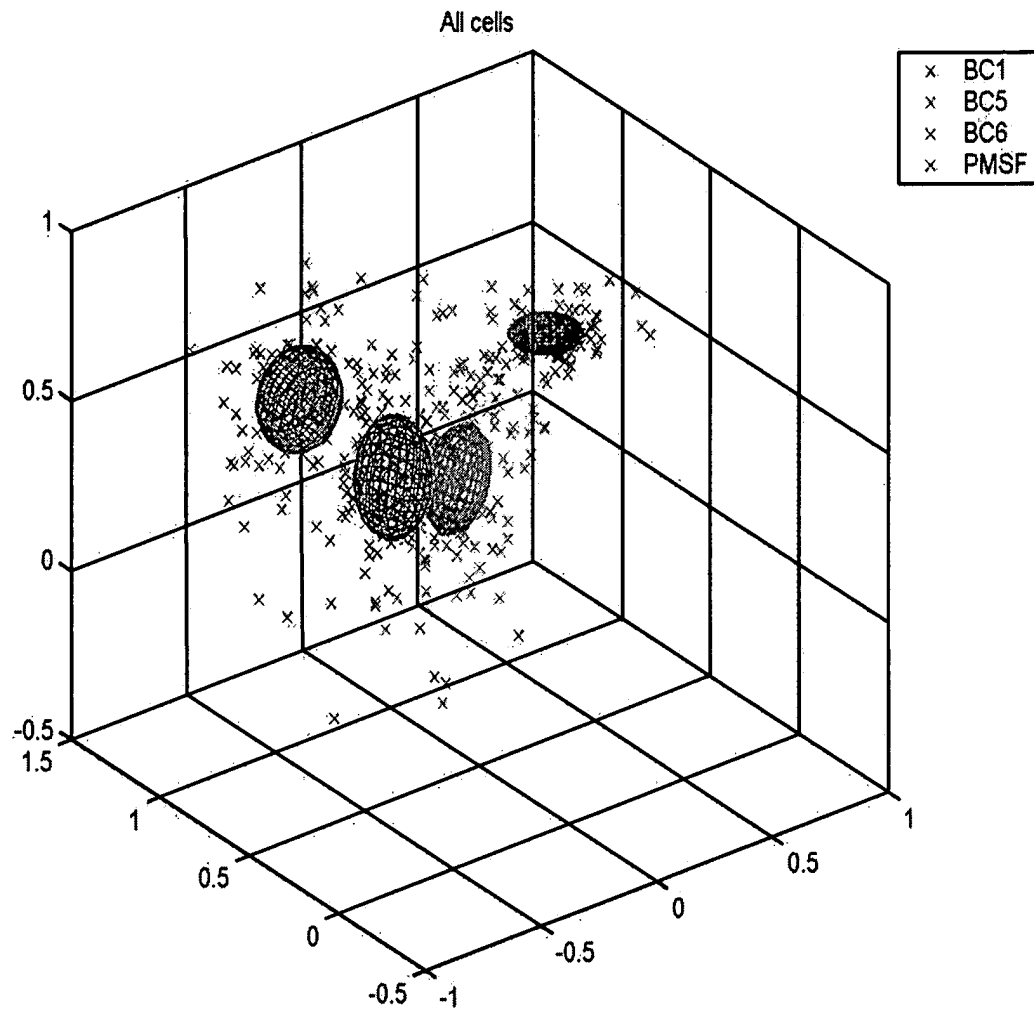


**FIG. 66D**



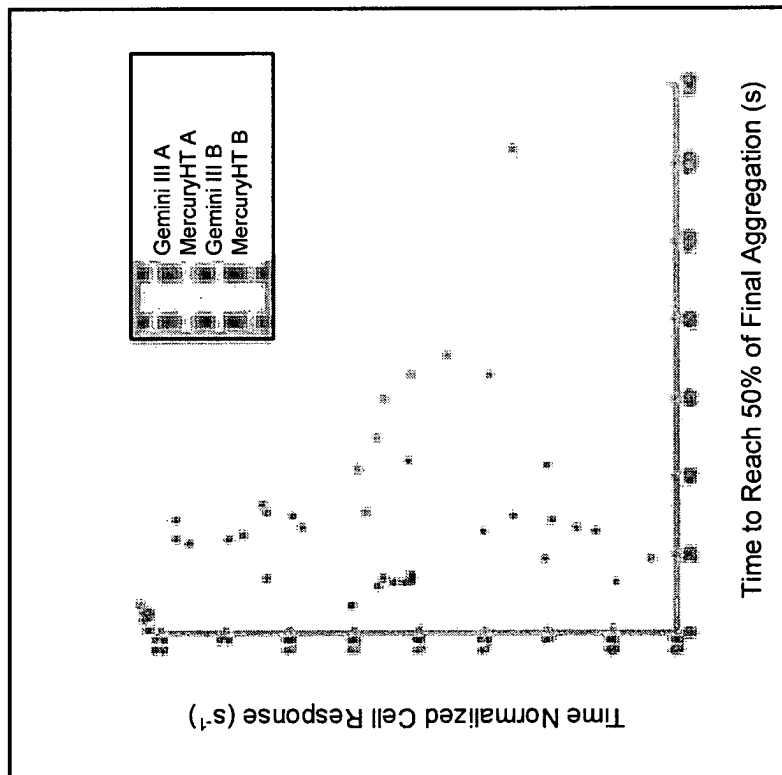


**FIG. 67A**



**FIG. 67B**

|        | Gemini III<br>n | Gemini III<br>Mean | Gemini III<br>$\sigma$ |  |
|--------|-----------------|--------------------|------------------------|--|
|        |                 |                    |                        |  |
| Fish A | 9               | 4.1                | 2.4                    |  |
| Fish B | 9               | 5.8                | 3.7                    |  |
|        | MercuryHT<br>n  | MercuryHT<br>Mean  | MercuryHT<br>$\sigma$  |  |
|        |                 |                    |                        |  |
| Fish A | 9               | 12                 | 23                     |  |
| Fish B | 9               | 6.4                | 5.9                    |  |



**FIG. 68**

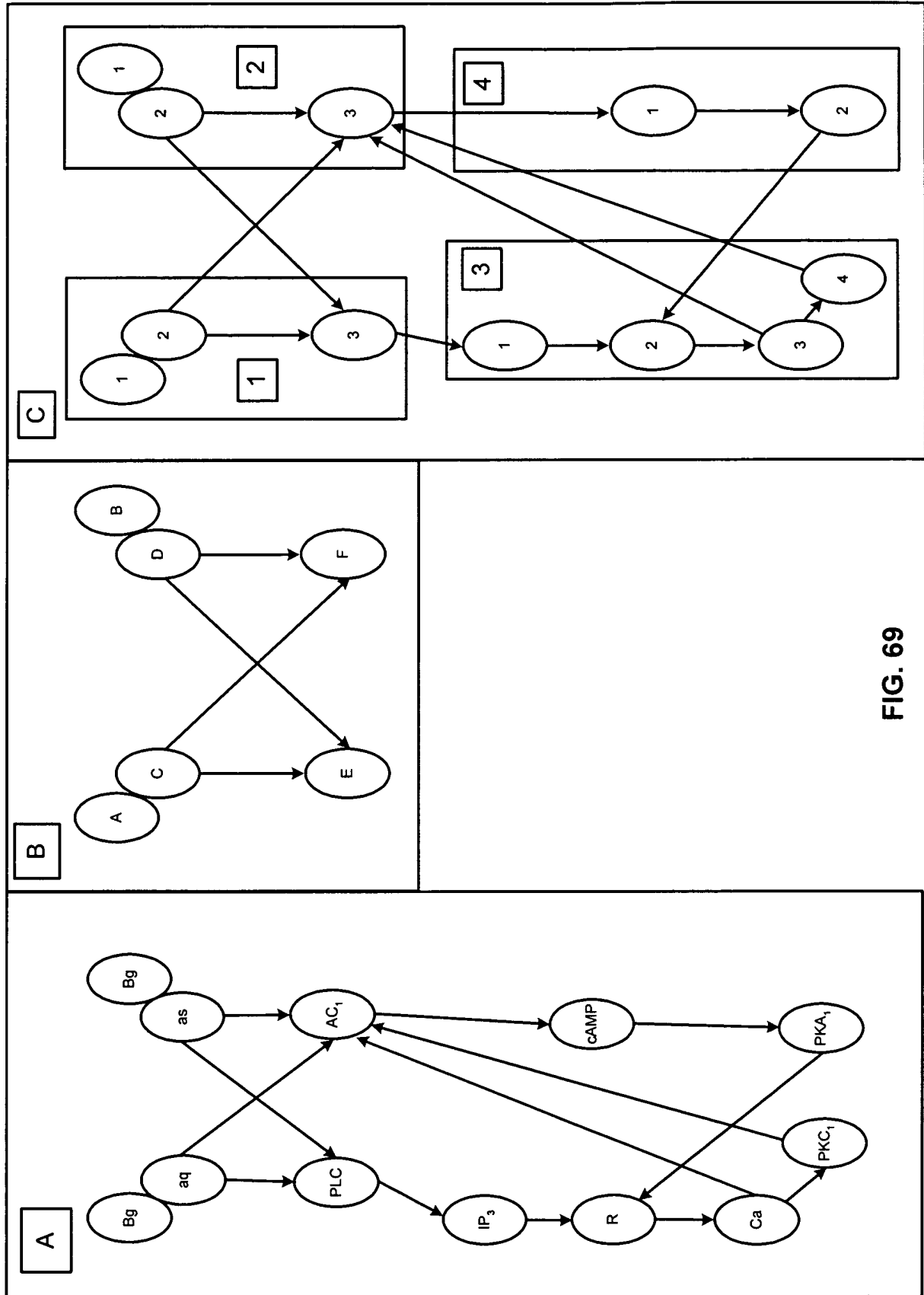
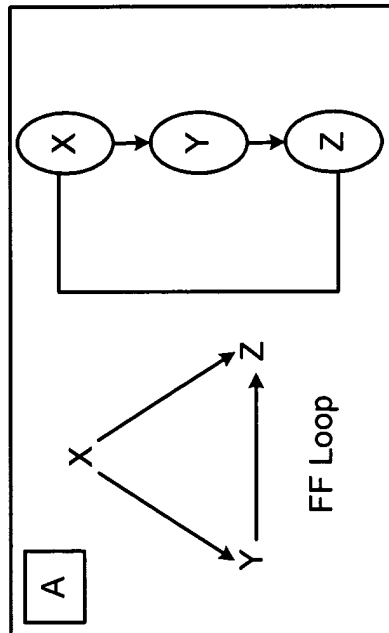
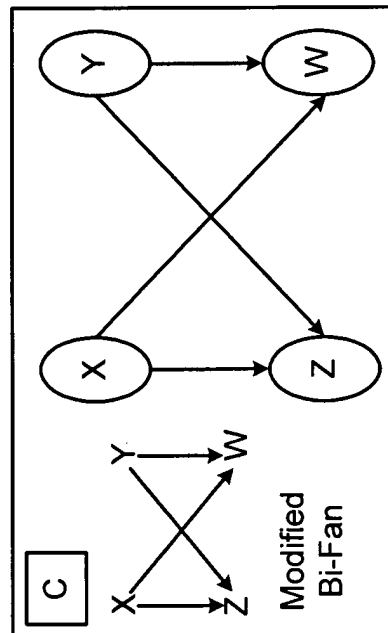


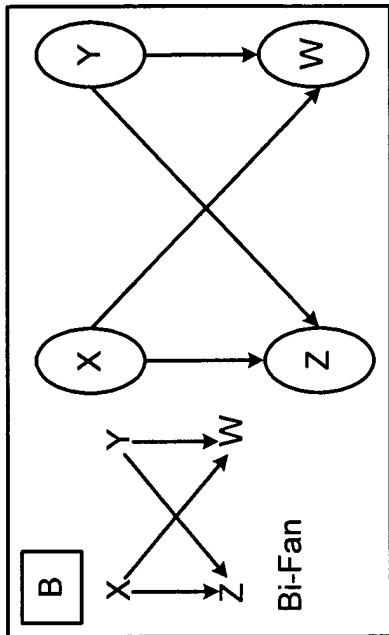
FIG. 69



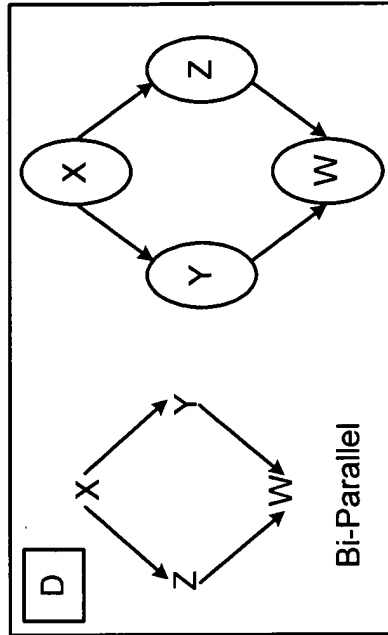
**FIG. 70A**



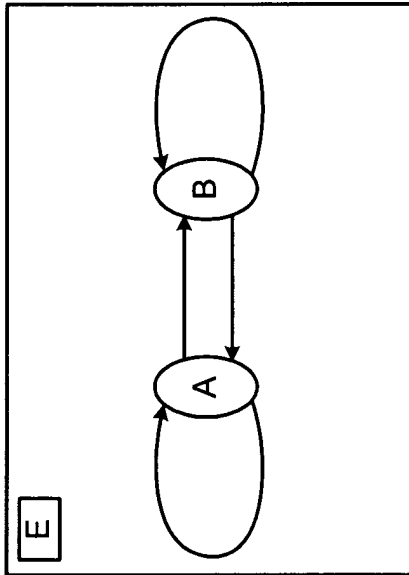
**FIG. 70C**



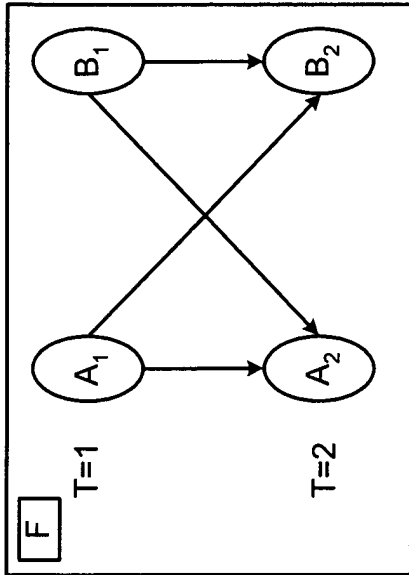
**FIG. 70B**



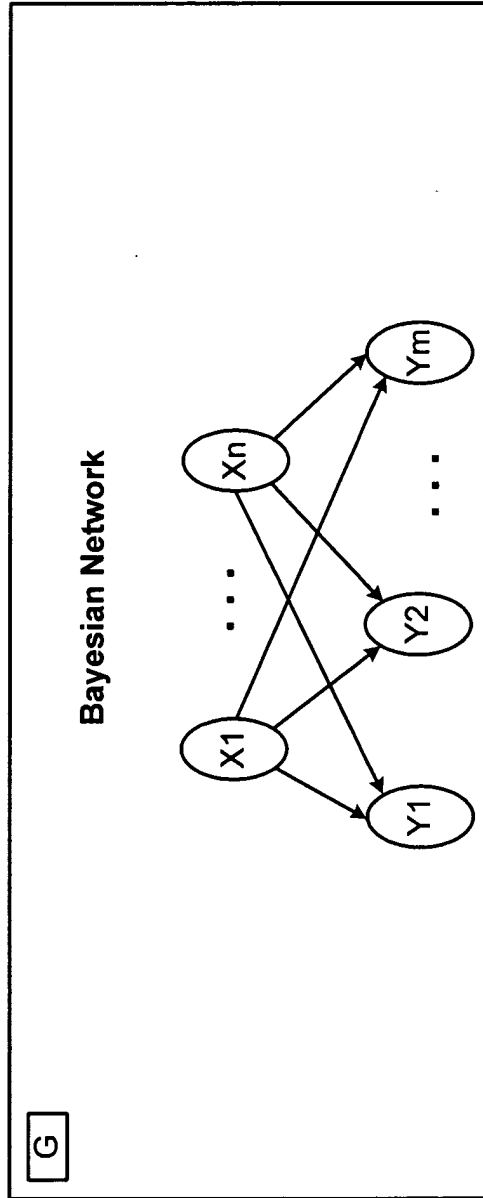
**FIG. 70D**



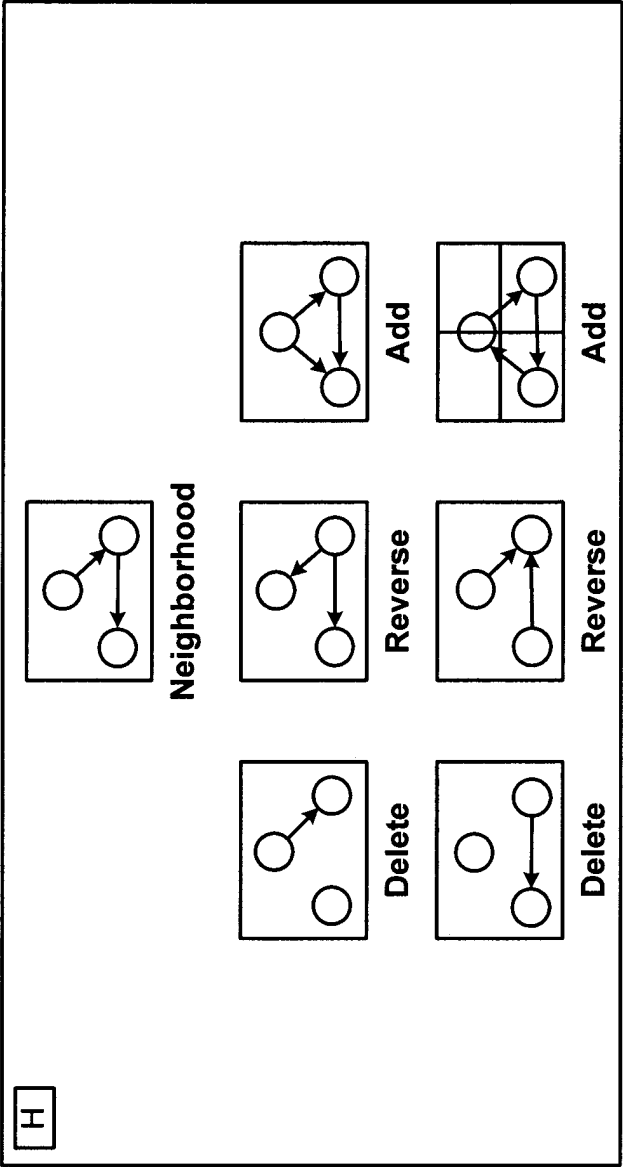
**FIG. 70E**



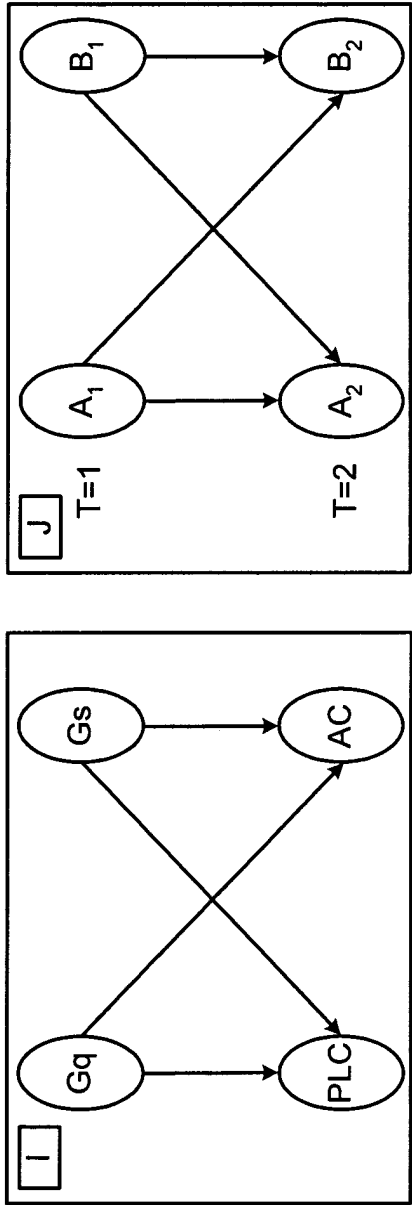
**FIG. 70F**



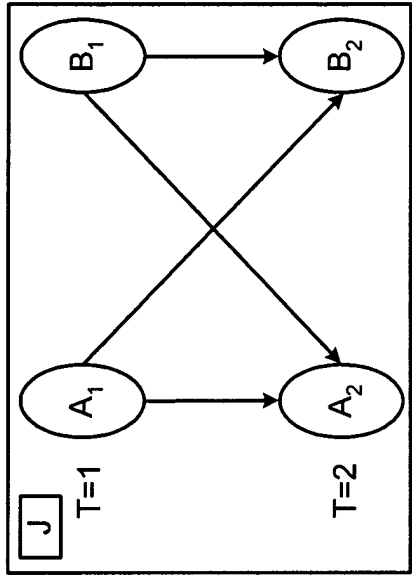
**FIG. 70G**



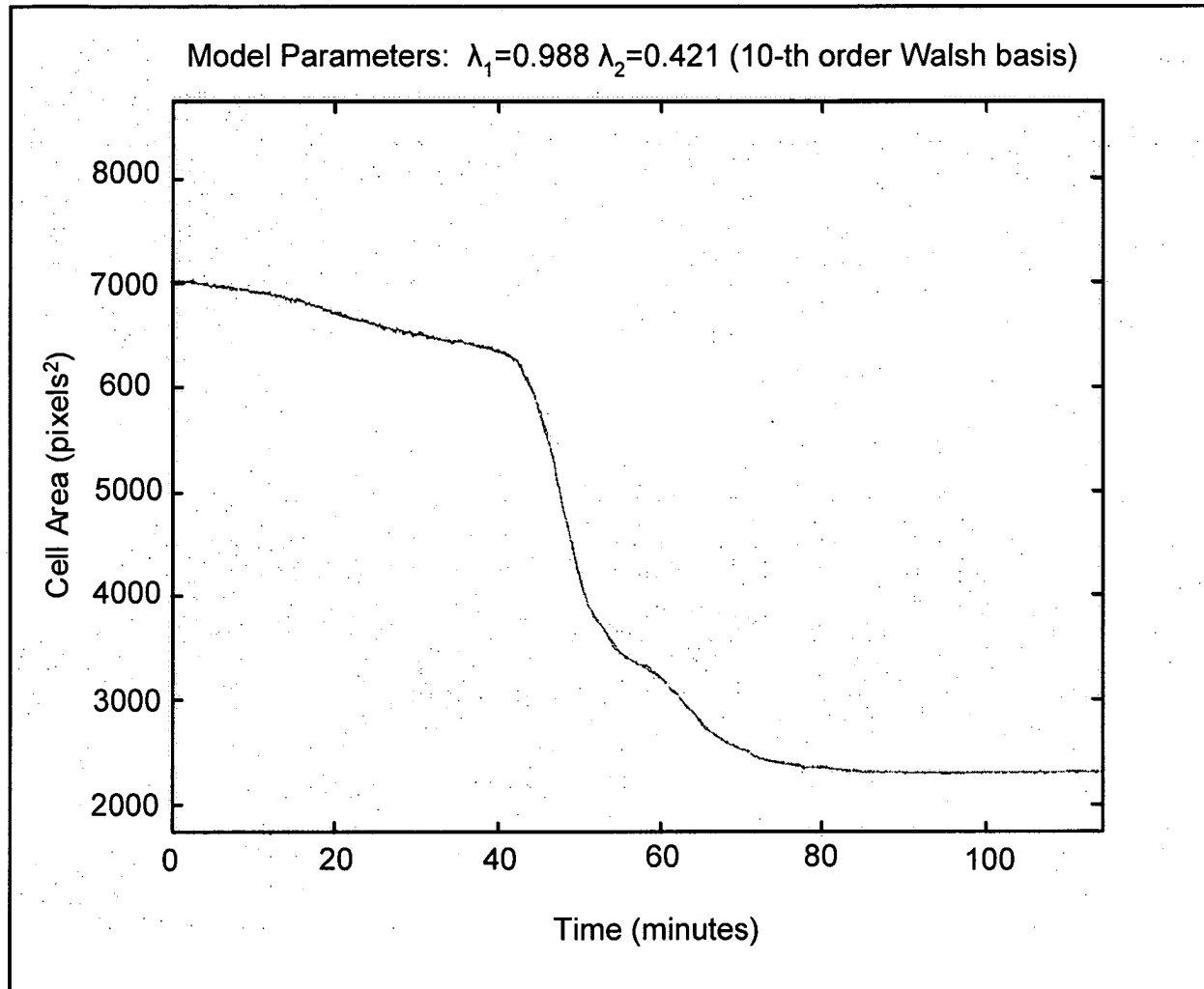
**FIG. 70H**



**FIG. 70I**



**FIG. 70J**



**FIG. 71**